

INDIAN COTTON COMMITTEE

MINUTES OF EVIDENCE

TAKEN BEFORE THE

INDIAN COTTON COMMITTEE

VOLUME V
COMMERCIAL

PART II

MINUTES OF EVIDENCE FROM MADRAS, BENGAL, IMPERIAL OFFICERS,
CENTRAL INDIA, BARODA AND HYDERABAD.



CALCUTTA
SUPERINTENDENT GOVERNMENT PRINTING, INDIA
1920

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NOTE.

It is regretted that it has been impossible to publish the evidence given before the Indian Cotton Committee earlier owing to the transfer of the Secretary to other duties in August, 1918. For convenience of reference, the evidence has been classified under the three heads, Agricultural, Irrigation and Commercial. Volumes I and II contain the Agricultural Evidence, Volume III the Irrigation Evidence and Volumes IV and V the Commercial Evidence. The evidence of a witness will, therefore, be found in one or other of these volumes according to its predominating character. The references in black type in the written statements are to the questions issued by the Committee which are printed at the commencement of each volume. Thus "(30) Local trade customs" shows that the paragraph is a reply to question 30. A glossary of the more common vernacular terms used in the evidence is appended.

F. NOYCE,
Secretary,
Indian Cotton Committee.

BOMBAY ; }
October 1st, 1919. }

Glossary of the more common vernacular terms used in the evidence.

Amin	.	.	.	.	.	Subordinate official of the Irrigation Department.
Arat	.	.	.	.	.	Commission.
Aratya	.	.	.	.	.	Commission agent.
Arhar	.	.	.	.	.	Pigeon pea (<i>Cajanus cajan</i>).
Bajra	.	.	.	.	.	Bulrush millet (<i>Pennisetum typhlocladum</i>).
Bania	.	.	.	.	.	Village shop keeper and money-lender.
Barani	.	.	.	.	.	Land dependent on rainfall.
Bhata	.	.	.	.	.	Laterite soil in the Central Provinces.
Bhindi	.	.	.	.	.	Lady's finger (<i>Ehretia corollata</i>), a vegetable.
Bhuca	.	.	.	.	.	Crushed straw.
Bigha	.	.	.	.	.	A land measure, usually about three-eighths of an acre.
Bora	.	.	.	.	.	Bag of unpressed cotton of varying weight, generally five maunds.
Chari	.	.	.	.	.	Great millet (<i>Sorghum vulgare</i>) grown as a fodder crop.
Chaudhri	.	.	.	.	.	A headman.
Dalal	.	.	.	.	.	Broker.
Deshi	.	.	.	.	.	Indigenous.
Doera	.	.	.	.	.	Bag of unpressed cotton of varying weight, generally five maunds.
Ghats	.	.	.	.	.	Hills.
Gwar, gwara	.	.	.	.	.	Field vetch (<i>Ceratonia siliqua</i>), a fodder crop.
Hari	.	.	.	.	.	Cultivating tenant in Sind.
Inam	.	.	.	.	.	Land held on favourable terms or free of land revenue.
Juar	.	.	.	.	.	Great millet (<i>Sorghum vulgare</i>).
Kamdar	.	.	.	.	.	Fieldman: subordinate in the Agricultural Department.
Kan	.	.	.	.	.	Weight of lint obtained from unit weight of unginned cotton.
Kanungo	.	.	.	.	.	Subordinate revenue official in charge of a group of villages known as Revenue Inspector in Madras and Circle Inspector in Bombay.
Kapas	.	.	.	.	.	Unginned cotton.
Karbi	.	.	.	.	.	Dry <i>juar</i> fodder.
Karnam	.	.	.	.	.	Village accountant.
Kharif	.	.	.	.	.	The autumn harvest.
Khurpa	.	.	.	.	.	Hand hoe similar in shape to a trowel.
Killa	.	.	.	.	.	Square of land usually equal to 1½ acre in area.
Kodo, kodon	.	.	.	.	.	A millet (<i>Paspalum scrobiculatum</i>).
Kumbu	.	.	.	.	.	Bulrush millet (<i>Pennisetum typhlocladum</i>).
Kunbi	.	.	.	.	.	A cultivator.
Kutki	.	.	.	.	.	A pulse (<i>Dolichos biflorus</i>).
Lakh	.	.	.	.	.	One hundred thousand.
Mahajan	.	.	.	.	.	Money-lender.
Makki	.	.	.	.	.	Maize (<i>Zea mays</i>).
Malguzar	.	.	.	.	.	Landholder in the Central Provinces.
Mandi	.	.	.	.	.	Market.
Methi	.	.	.	.	.	Fenugreek (<i>Trigonella foenum-græcum</i>).
Moth	.	.	.	.	.	A pulse (<i>Phaseolus acutifolius</i>).
Mukhtiarkar	.	.	.	.	.	Revenue officer in charge of a <i>taluka</i> (q.v.) in Sind.
Mung	.	.	.	.	.	A pulse (<i>Phaseolus mungo</i>).
Patel	.	.	.	.	.	Village headman.
Patwari	.	.	.	.	.	Village accountant.
Phutties	.	.	.	.	.	Unginned cotton: <i>Kapas</i> .
Rabi	.	.	.	.	.	The spring harvest.
Rui	.	.	.	.	.	Lint.
Sahukar	.	.	.	.	.	Money-lender.
Sailab, Sailabi	.	.	.	.	.	Land irrigated by floods or percolation from a river.
San	.	.	.	.	.	Hemp (<i>Crotalaria juncea</i>).
Senji	.	.	.	.	.	A fodder crop (<i>Melilotus parviflora</i>).
Shaftal	.	.	.	.	.	A fodder crop (<i>Trifolium resupinatum</i>).
Tahsil	.	.	.	.	.	Revenue sub-division of a district.

Tahsildar	Officer in charge of a <i>tahsil</i> , <i>taluk</i> or <i>taluka</i> (q.v.).
Taluk, taluka	Revenue sub-division of a district.
Til	Sesamum (<i>Sesamum indicum</i>).
Toria	An oil seed (<i>Brassica campestris</i>).
Tur	Pigeon pea (<i>Cajanus indicus</i>).
Urad	A pulse (<i>Phascolus mungo</i>).
Varagu	Bulrush millet (<i>Pennisetum typhoideum</i>).
Zaildar	A rural notable appointed by Government. The head of a Zail or Circle of villages.
Zamindar	A landowner ; in the provinces visited by the Cotton Committee generally a peasant proprietor.

VOLUME V.

Commercial.

PART II.

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INDIAN COTTON COMMITTEE

MINUTES OF EVIDENCE

TAKEN BEFORE THE

INDIAN COTTON COMMITTEE.

VOLUME V—Commercial.

PART II.

Questions issued by the Committee.

I.—AGRICULTURAL EXPERIENCE.

(a) "*Deshi*" short-staple cotton.

1. In what cotton growing districts have you been stationed and for what period in each? Have you been in actual touch with cotton cultivators?
2. What varieties of *deshi* short staple cotton are grown in the districts with which you are acquainted?
3. What is the average size of holdings in which cotton is grown and what proportion of the holding is under cotton?
4. What are the average yields and profits per acre?
5. What rotations are followed and what manures, if any, are applied?
6. How does the return to the cultivator of the different varieties of *deshi* short staple cotton compare with the return from (a) *deshi* long staple cotton, (b) other *deshi* crops, (c) exotic cottons?
7. Does the area under *deshi* short staple cotton fluctuate at all largely in the districts with which you are acquainted, and if so, is there any special reason for this? Is there any possibility of an increase under *deshi* short staple cotton and, if so, what are the factors which would limit that increase?
8. To what uses is the seed put? Is any seed selection practised and, if so, on what principles? Is seed selected for sowing specially hand ginned?
9. Please add any remarks you consider may be helpful to the Committee on the general economic state of the cotton growing districts with which you are acquainted.

N.B.—Please see note at end of Section (c) below.

(b) "*Deshi*" long staple cotton.

10. In what cotton growing districts have you been stationed and for what period in each? Have you been in actual touch with cotton cultivators?
11. What varieties of *deshi* long staple cotton are grown in the districts with which you are acquainted?
12. What is the average size of holdings in which cotton is grown and what proportion of the holding is under cotton?
13. What are the average yields and profits per acre of different varieties of *deshi* short staple cotton, of which you have had experience? How do these compare with those (a) *deshi* short-staple cotton, (b) other *deshi* crops, (c) exotic cottons?
14. What rotations are followed and what manures, if any, are applied?
15. What in your opinion, are the special conditions which would affect any increase in the area under *deshi* long staple cotton in the districts with which you are acquainted, e.g., length of ginning season, irrigation available, climatic considerations, competition with food crops, limitation owing to necessity of observing rotations, labour supply, etc.?
16. Do you consider that, in the cotton growing tracts with which you are acquainted, the right varieties of *deshi* long staple cotton are being pushed in the right districts or whether still superior types could be introduced?
17. What measures would you recommend to prevent the mixing of *deshi* long staple cotton with (i) *deshi* short staple cotton, (ii) exotic cotton (a) in the field, (b) in the factory?
18. To what uses is the seed put? Is any seed selection practised and, if so, on what principles? Is seed selected for sowing specially hand ginned?
19. Please add any remarks you consider may be helpful to the Committee on the economic state of the cotton growing districts with which you are acquainted.

N.B.—Please see note at end of Section (c) below.

(c) *Exotic* cotton.

20. In what cotton growing districts have you been stationed and for what period in each? Have you been in actual touch with cotton cultivators?

INDIAN COTTON COMMITTEE :

QUESTIONS ISSUED BY THE COMMITTEE.

[Continued.]

21. What varieties of exotic cotton are grown in the districts with which you are acquainted ?
22. What is the average size of holdings in which cotton is grown and what proportion of the holding is under cotton ?
23. What are the average yields and profits per acre of the different varieties of exotic cotton of which you have experience ? How do these compare with those of (a) *deshi* short staple cotton, and (b) *deshi* long staple cotton, (c) other *deshi* crops ?
24. What rotations are followed and what manures, if any, are applied ?
25. What, in your opinion, are the special conditions which would affect any increase in the area under exotic cotton in the districts with which you are acquainted, e.g., length of ginning season, irrigation available, climatic considerations, competition with food crops, limitation owing to necessity of observing rotations, labour supply, etc. ?
26. Do you consider that, in the cotton growing tracts with which you are acquainted, the right varieties of exotic cotton are being pushed in the right districts or whether still superior types could be introduced ?
27. What measures would you recommend to prevent the mixing of exotic cotton with (i) *deshi* short staple cotton, (ii) *deshi* long staple cotton (a) in the field, (b) in the factory ?
28. What is your opinion as to the desirability of importing seed direct from America or Egypt as required as against relying on selected seed grown in India ?
29. Please add any remarks you consider may be helpful to the Committee on the economic state of the cotton growing districts with which you are acquainted ?

N.B.—The Committee would be obliged if you would give them your views as to the best arrangement for handling cotton in your province. Under this head you might consider research in connexion with improvement of the plant, establishment of seed farm for the production of improved seeds, district staff necessary and the regulation of buying agencies and ginning factories.

II.—COMMERCIAL ASPECT.

30. Give, as fully as possible, an account of local trade customs with which you are acquainted in regard to the marketing of the cotton crop, in particular as regards any systems of agency, advances, future buying or contracts.
31. What are the commercial names of the various grades of cotton with which you are acquainted and from what areas do they come ? Do you regard them as suitable and, if not, what alterations would you suggest ? Can you suggest any means by which the commercial names could be standardized, i.e., of securing that the same name should be used for the same cotton from whatever locality it comes ?
32. What do you consider is the best form of buying agency ?

III.—STATISTICAL.

33. Do you consider that the cotton forecast, as at present published, is sufficiently accurate as far as your province is concerned ? If not, can you suggest any way in which it could be improved ?
34. Can you suggest any methods by which the statistical information published by the Government in regard to cotton other than the forecasts, e.g., the cotton press return, could be made of greater use to the cotton trade ?
35. What are your views in regard to the daily publication of Liverpool and Bombay cotton prices at up-country markets ?

IV.—MANUFACTURE.

(a) Ginning and Pressing.

36. What class of gins and presses do you use and how many have you in your factory ?
37. What is the size of the bale produced by your factory ?
38. What is your opinion as to the relative merits of saw and roller gins ?
39. Have saw gins been successful with Indian cotton and, if not, what is the objection to them ?
40. Have you experienced any difficulty in obtaining factory labour ?
41. Do you find the condition in which raw cotton reaches your factory in any way objectionable and, if so, what remedies would you suggest ?
42. Assuming that it were found possible to replace any large quantity of short staple cotton by long staple cotton, would any substantial alteration in your machinery be necessary ?

N.B.—The Committee would be obliged by any information you can give them in regard to the general question of long *versus* short staple cotton and also in regard to any experience you have had in handling any new staple cotton.

(b) Spinning and Weaving.

43. What counts are spun in your factory and what is your principal market ?
44. Do you find the condition in which cotton reaches your factory in any way objectionable and, if so, what remedies you suggest ?
45. What, in your opinion, would be the effect on the cotton market generally if any large proportion of the short staple cotton at present grown in India were replaced by long staple cotton ?

N.B.—The Committee would be obliged by any information you can give them in regard to the general question of long *versus* short staple cotton and also in regard to any experience you have had in handling new staple cotton.

V.—GENERAL.

46. Does your experience indicate that buyers in the past have been prepared to encourage the growth of improved cottons by offering a premium for them ?
47. Do you consider that the water rates charged have any effect on the cultivator's preference for a particular crop ?
48. Do you consider that any changes are called for in the schedule of water rates at present in force ?
49. Do you consider that the tenure on which land is held in the tracts of which you have experience in any way affects the extension of cultivation of cotton ?

Madras.]

Mr. M. WYNNE.

67. Has it been your experience that cultivators prefer wheat to cotton as an irrigated crop? If so, what is the reason for the preference?

68. Does the supply in the rivers increase gradually in spring and decrease gradually in autumn or are both the increase and the decrease sudden? In either case what is the effect on the cultivator's preference for a particular crop? Please furnish, if possible, a diagram with statistics illustrating your reply from the canal of which you have experience?

69. (a) To what extent do wells exist in the areas commanded by the canals of which you have experience and what steps are required to extend the irrigation under them in those areas?

(b) Have you any experience of tube wells and do you consider that their use would be valuable in this connexion?

71. Do you consider the existing water rates charged for cotton suitable? If you can give statistics to explain your answer, please do so.

71. Can you give a rough estimate of the average area of each crop grown on a holding of 100 acres? How are these areas affected by the water supply, the necessity for growing a fodder crop and of preserving suitable rotations of crops. Would any proposals you have put forward bring about an alteration in these areas?

72. Do you consider that sufficient water is available for a considerable increase in the area of cotton and, if so, why is a larger area not irrigated?

73. Is it your experience that cultivators prefer *deshi* cotton to American cotton? If so, can you explain their reasons for the preference?

74. Is it your experience that the canal regulations create any difficulties in regard to the irrigation of American cotton?

VII.—Madras.

Mr. M. WYNNE, Agent, Messrs. Binny & Co., Nandyal.

EXAMINED AT NANDYAL, FEBRUARY 27TH, 1918.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

(b) "Deshi" long staple cotton.

5274. (10) Experience.—I have been stationed in Devangeri in the Mysore State for ten years also in Tadpatri in the Anantapur district four years and four months and in Nandyal in the Kurnool district three years and six months. I have not been in actual touch with cotton cultivators.

5275. (11) Varieties.—No varieties of *deshi* short staple cotton are grown here (Nandyal). All *deshi* cotton grown in this district is more or less long staple. The following are the varieties:—

(a) White Northerns.

(b) Red Northerns.

(c) Masra.

(d) Sircar (Government) cotton.

(2) (a) *White Northerns* are grown in Allagadda, Koilkuntla, Nallagatla and Sirvel, also in Nandyal and Nandikotkur. This cotton is creamy to white in colour with a fairly long staple.

(3) (b) *Masra* is grown in Nirvada, Nandavaram, Chenampalli and Banganapalli. This cotton is of a creamy colour and has a longer staple than that of *White Northerns*.

(4) (c) *Red Northerns* are grown in Gopavaram, Rudravaram up to Chagalmarri and west of the Nallamalais. This has a longer staple than *white Northerns*. The colour of this cotton is creamy to red. Red cotton is also brought in from Tarlapadu and Markapur and is of a good red colour but poorer in staple than the one mentioned above. It is by allowing this cotton in this market that the mixing of short staple cotton of the Guntur market takes place. The mixing is done by ginning the two together in certain proportions. The Tarlapadu cotton being of a good red colour takes in the mixing and escapes being easily detected. The difference in prices between Guntur short staple cotton and Nandyal red cotton pays well, as the difference in price more than covers freight and other expenses. This cotton is, however, clean, free of leaves and dust. Tarlapadu and Markapur cotton do not come under *Red Northerns* though they are marketed at Nandyal as such.

4. (d) *Sircar (Government) cotton*.—This cotton has lately been introduced and is noted for its colour which is very white but the staple, I should say, is weaker and not as long as that of *White Northerns*. The average yield of this cotton is about the same as that of *White Northerns* but it gives five per cent. more lint.

5276. (12) Size of holdings.—The average size of holdings may be taken as 25 to 30 acres of which 35 to 40 per cent. is under cotton.

5277. (13) Yields and profits and comparative returns.—The yield of *deshi* cotton and exotic cotton may be compared as follows:—

	White Northerns.	Masra.	Red Northerns.	American.	Cambodia.
Maunds of 25 lbs.	8	8½	9	11	13 to 15

5278. (14) Rotations and manures.—Cotton and *jonna* (*juar*) are the main rotatory crops. As a general rule, the cotton crop is not directly manured but the previous crop is, with about five to seven cart-loads of cattle manure per acre.

Madras.]

Mr. M. WYNNE.

[Continued.]

5279. (15) **Conditions affecting increase in area.**—Generally forty per cent. of the holding is put under cotton, forty per cent. under *jonna* and twenty per cent. under chillies, green gram, horse gram, Bengal gram or ground nuts. It is not possible to increase the cotton growing area by length of ginning season, etc. The high prices obtained during the past two years owing to war conditions resulted in an increase of area. I may say that, owing to the necessity of observing rotations, it may be difficult to affect any increase in the cotton growing area. I may further add that, in normal conditions the average gain, leaving out the past two years that are exceptional, does not encourage the ryot to increase his holdings under cotton. There is a fear of the holdings under cotton decreasing when the ground-nut fetches the normal price of Rs. 14 to one rupee a maund. The gain of different crops in normal conditions may be compared as follows:—

	Rs.
Cotton	10 per acre.
<i>Jonna</i>	10 „ „ with stalks.
Ground-nut	20 to 25 per acre.
Chillies	30 to 40 „ „

Of the above, though chillies pay the ryot best, he is unable to increase this area for want of manure and labour.

5280. (16) **Suitability of existing varieties.**—It does sometimes happen that the right varieties of *deshi* long staple cotton are not being sown in the right districts. Ryots sometimes grow White Northerns where they ought to grow Red Northerns and *rice versa*. The quality and quantity would be increased if selected seed were used for sowing and the plants opened out more.

5281. (17) **Prevention of mixing of different varieties.**—By the present trade custom, the selling of cotton passes through the village middleman, then the broker or the big merchant of the town and lastly to buying companies. It is this middleman who is responsible for mixing. He purchases from different ryots different qualities at different prices and mixes them together while ginning and brings the cotton into the market and gets a fairly good price for his trouble. This may be put a stop to in the course of a few years by establishing a cotton market, when the ryots will gradually come into direct contact with the buyers who will compete for the cotton in the market by which the ryot is likely to get a better price than he would from the middleman.

5282. (18) **Uses of seed and seed selection.**—Cotton seeds are used as cattle food only. Machine ginned seeds are generally used for sowing. Some do use hand ginned seeds but these are not specially selected.

(c) *Exotic cotton.*

5283. (21) **Varieties.**—There are two foreign crops grown on a small scale in this district, *viz.*, Cambodia and American Dharwar.

(2) *Cambodia* is white, has a silky feel and of a longer staple than White Northerns. The lint somewhat stained due probably to want of irrigation. Some growers of this quality irrigate it but on a small scale. Irrigation would, I think, increase the strength and length of the staple, also the yield and I do not think it would be so much stained.

(3) *American Dharwar.*—This is the worst type of cotton grown in this district. The staple is poor and the lint much stained. When the difficulty of selling this cotton by itself is felt by the middleman, he mixes it with white or *masra* cotton and tries to pass it off as White Northerns. This cotton is largely grown in the Banganapalle State on alkaline soils where the indigenous cotton does not thrive well. It would be well to discourage this quality. If all buyers would reject all such cotton, ryots would discontinue growing it.

(4) The lint obtained from Cambodia, White Northerns and Red Northerns from 63 maunds of 25 lb. compares as follows:—

	Cambodia Kapas.	White Northern.	Red Northern.
	Maunds.	Maunds.	Maunds.
Lint	22	17	15
Seeds	41	46	48
	63	63	63 maunds of kapas.

II.—COMMERCIAL ASPECT.

5284. (30) **Local trade customs.**—The price is fixed on 500 lb. per *khandi* pressed weight. Most of the business, say 75 per cent. is on the advance contract system. Ryots sell to the middlemen, sometimes to the brokers and the brokers to the different firms. Some middlemen sell to firms but generally through brokers. Advances are made on loose cotton when delivery is taken by the firm and a final settlement made after the cotton is pressed and weighed.

Mr. M. WYNNE called and examined.

5285. (President.) I have been three years and six months in Nandyal. I was in Devangeri for ten years. There are two varieties of cotton in Devangeri; one is known as the *jawari* or small *kapas* and the other is called large *kapas*. The small *kapas* is fairly strong and the lint has a reddish colour. It is a little darker than Nandyal cotton. The length of staple of *jawari* is about an inch. The other cotton is the American Dharwar, which is grown very largely there. It is fairly good; the staple is short but it is very white in colour. The Bombay people buy it very largely. They do not care about staple; they look more for colour. Madras looks to staple but Bombay looks to colour.

5286. The cotton on the whole here at Nandyal is very good especially the White Northerns. The staple is about one inch to 1½ of an inch. The first pickings are not up to the latter standard at all. The staple of Red Northerns is longer and stronger than that of White Northerns. *Masra* cotton is neither white nor red. It has a dirty white colour. There is a fairly large quantity of this. We only take it with an allowance. I have had experience of Government selection. We did not buy the Government cotton last year. We could

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not take it because it was very bad. All the cotton last year was bad on account of heavy rain. This year we have made no contracts with Government.

5287. The main objection to the cotton here, from the merchants' point of view, is that it is very dirty and adulterated; the cultivators do not take the trouble to keep it clean. There is good deal of sand, dirt and seeds in it. The different varieties are mixed. As the middlemen go round and buy *lapas* from the different ryots, they mix it altogether and get it ginned. We have not our own ginnery and we have just got to take what we can get. I think that if each firm had its own ginning factory or leased a factory, it could get better cotton because it could supervise the ginning. We could not get one ginning factory big enough for all the cotton we want, and we should have to lease others.

5288. I think it would be a good thing if a cotton market could be established here. The matter is under correspondence but the market has not been started yet. I think the big Indian merchants are against it. They fear that the cotton will be brought to the market and sold as spot cotton direct to the different firms.

5289. (Mr. Roberts.) They are putting up openers in the ginning factories here this year; if there are openers, one gets cleaner cotton. The provision of openers would be beneficial to the factory owners themselves because they would turn out more. The ginner is nearer to the cultivator than the merchant. At present, the cotton is cleaned, after it is ginned, on carts before we press it.

5290. About one-fourth of the cotton in this tract is Red Northerns and three-fourths are White. That is roughly the proportion all over the district, that is round about Nandyal side. The crop of Red Northerns is about 5,000 bales and of White Northerns 25,000 bales including *masra*. We get different qualities of white, red and *masra*. As a rule the white cotton fetches a rather better price than the red although it is not so good in staple. I supposed this is on account of colour and of its being cleaner. We are buying some Red Northerns this year as an experiment at the same price as White. If the cotton is brought in clean, we are giving the same rate for it as for clean white cotton. They used to mix red and white a good deal, and pass it off as white. Now that we are paying the same price, there is no advantage in mixing them.

5291. When I was here some ten years ago the Agricultural Farm was started. The first crop of cotton White Northerns, put out by the Department of Agriculture was very good. We pressed the first crop but that was only a bale of it. That was in 1907. I came back again to Nandyal only last year. Previous to that I was here for about 2½ years. The Agricultural Department's cotton that was brought to me last year was very bad owing to excessive rains, the staple was very weak and I had to reject it. The tests were very bad; other cottons were also not up to the standard.

5292. I should like to have central places where cotton could be brought in for sale. Big firms would go there and bid for the cotton. They have such a market in Devangeri in Mysore. The cultivator would then get the advantage of competition.

5293. There is a meeting place at Adoni which is a sort of market. Volkarts and Rallis buy there and run up the prices very much. We make contracts with the big brokers or big dealers. We have no special broker of our own. We make our contracts as a rule about three months before the crop comes in. The price is fixed when the contract is made. This year's crop has already been sold to a very large extent. I think that fifteen to twenty thousand bales were sold before the end of December. The delivery time is in April, May and June. We have had no reason to complain of non-delivery so far. If the prices go up, there may be a tendency to deliver bad cotton and cotton below grade. The dealers who make the contract with us have already bought in advance from the middlemen; the middlemen have bought already from the ryots and it is the dealers who have contracted with us, will get into trouble in regard to delivery. They may import inferior *lapas* from some other place which they gin and try to pass off as White or Red Northerns as the case may be.

5294. (Mr. Hodgkinson.) We buy cotton loose and press it ourselves. We do not find any damp in the cotton. It is only in the rainy season that the cotton gets damp. Some cotton is very badly mixed with *lapas* or seed but that is very seldom the case. The blow room loss is very high, at times about 18, 20 and 25 per cent.

5295. Cambodia cotton is longer in staple than White Northerns. It is about an inch and a half. There is a little Cambodia grown near Kurnool. I do not think it would grow in this tract even with irrigation. The climate is too dry.

5296. We make contracts for good clean cotton and we give the best rate for it, the rate that they ask. If they give us clean cotton, the blow room loss would be below sixteen per cent. If the cotton is dirty, we make an allowance. We contract for clean cotton and expect the same, if this cotton is not clean it is allowed. Anything of which the blow room loss is up to sixteen per cent. is clean cotton. We have been paying a premium of Rs. 3 per *khandi* of 500 pounds of lint for Government cotton because it was cleaner cotton. Last year, we could not take it as, on account of the heavy rains, the cotton was bad. The price per *khandi* was probably Rs. 200. My firm would pay more if the ryots would give cleaner and better cotton.

Mr. B. ZEINDLER, Agent, Messrs. Volkart Bros., Guntakal and Nandyal.

EXAMINED AT NANDYAL, FEBRUARY 27TH, 1918.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

5297. (1 and 10) Experience.—I have been stationed for about five years in the Ceded Districts and have occasionally come in actual touch with cotton cultivator, either on my district duty, or attending the sale of cotton in the various markets.

5298. (2 and 11) Varieties.—The cottons grown in the Ceded Districts are usually classified as "Westerns" and "Northerns," the latter style being less white in appearance than the former. Western cotton is produced chiefly in the Bellary district (75 per cent.) and in a portion of the Anantapur district (20 per cent.) and a certain quantity is imported from areas of the Nizam's Dominions bordering on the Bellary district. Northern cotton.—This is grown in the districts of Kurnool (60 per cent.), Cuddapah (20 per cent.) and in a corner of the Anantapur district.

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Mr. B. ZEINDLER.

[Continued.]

(a) *Deshi short staple cotton.*5299. *Varieties.*—There are three varieties of short staple cotton, viz.—

Mangari-Westerns,
American-Northerns and
Sircaars-Northerns.

This denomination 'American-Northerns' would indicate an exotic growth. However as this crop is not produced from seed imported direct from America but from acclimatised American cotton seed of other parts of India, I am dealing with this crop along with the two other *deshi* crops.

5300. *Mungari-Westerns.*—This is the early crop in the Western cotton area. It is raised almost exclusively on red and loamy soils of the Bellary district. These soils, especially pure red soil, have proved unsatisfactory for the cultivation of ordinary late or *hingari* cotton, hence our ryots gladly replaced the latter by *mungari* cotton after trials with this variety some ten years ago met with full success as far as quantity is concerned. The seeds of our present *mungari* crop have been imported from Hubli and the major portion from Akola. Our farmers assert that Akola-*mungari* plants produce as a rule a less starchy quality than Hubli-*mungari* and some care is taken to avoid the remaining 'Hubli-seed' whilst sowing.

(2) The quality of *mungari* cotton is rather inferior, full of stains, and irregular, short, in staple. *Mungari* cotton fetches about Rs. 20 less per Bombay *handi* than ordinary *hingari* cotton; *mungari* *kapas*, however, is paid better than ordinary *kapas* owing to the higher percentage of lint in *mungari*. The farmers, therefore, prefer selling *mungari* in *kapas* shape. Sometimes they retain their *mungari* *kapas* in their villages till *hingari* *kapas* has been picked and then slightly admix *hingari* *kapas* with *mungari* *kapas* and try to obtain for the mixture the full rate ruling for pure *mungari* *kapas*.

(3) *Mungari* *kapas* arrivals start in the months of December and January whilst *hingari* *kapas* comes in only in March and April. In January and February, *mungari* *kapas* is ginned fairly pure and the cotton is mostly taken up by mills. Later in the season, when three kinds of *kapas* are sold in the markets (pure *mungari*, mixed *mungari*-*hingari* and pure *hingari*) ginnings become rather mixed as it is practically impossible to separate the various qualities. Buyers of *kapas* are usually forced to take up a certain quantity of *mungari* or mixed *kapas* if they want to secure any larger quantity of *hingari* *kapas* as the bazaar brokers would refuse to sell *hingari* *kapas* separately till perhaps in the second part of the *kapas* season when *mungari* *kapas* arrivals rapidly decrease. So, for some time at least, the ginning factories turn out this mixture of short and long stapled cotton which is undesirable both for quality and purity of seed.

(4) I estimate the total production of *mungari* cotton at about 10,000 bales at 400 lb. for a normal season. The quantity of *mungari* mixed into *hingari* cotton may reach about seven per cent. of the *hingari* yield.

(5) The financial results for the farmers are given as under :—

	Outturn per acre lbs. <i>kapas</i> .	Lint percentage.	Profit per acre. Rs.
Hingari	240	26	35
Mungari	300	30-32	50

taking the cost per acre of both *mungari* and *hingari* cultivation at about Rs. 15, and calculating profits on basis of cotton prices ruling now.

5301. *American-Northerns.*—This crop takes the same position in the Northerns cotton tracts as *mungari* cotton in the Westerns sector. It is an earlier crop than the indigenous *hingari* cotton, and equally yields a heavier outturn per acre with a higher lint percentage than ordinary long staple cotton. The percentage of lint is, however, not so high as for Westerns *mungari* and, in consequence, the profit per acre is about Rs. 5 less comparatively.

(2) American-Northern cotton has been raised from 'American' seed introduced from the Dharwar district (Gadag). In colour the cotton is white but invariably spoiled by stains. The staple is short.

(3) A large area of the Northerns division is covered by this American cotton cultivation which is spreading fast in the Tadpatri range and in the adjoining villages of the Cuddapah district. The total production for the new season is estimated at about 14,000 bales of 400 lbs. each whereof by far the largest portion is marketed at Tadpatri. It is but seldom that American cotton is sold separately. Mostly it arrives mixed with indigenous long staple cotton.

5302. *Sircar-Northerns.*—With a view, probably, to put a stop to, or discourage further increase of, the growth of American cotton in the Nandyal circle and to improve on the Northerns styles in general, the Government Farm at Nandyal have made careful experiments with seed produced from special selected best indigenous White Northerns. The seeds of subsequent crops by the farm are yearly sold to the cultivators. The cotton produced of such seed is called 'Sircar' cotton. This cotton is of a very satisfactory style, the colour being a splendid white, but unfortunately its staple is rather disappointing. In this respect, I believe first trials of Sircar cotton on the Farm's land have been more satisfactory and it may be that the reason for the present plants of Sircar cotton producing short staple has to be looked for in a probable deterioration of the seed in the different cotton tracts.

(2) Sircar and American cotton give about the same outturn per acre and there is also but a small difference in the percentage of lint.

(3) Sircar cotton not finding particular favour with cotton buyers arrives now very rarely separately in the pressing stations, generally it comes in mixed with ordinary white, long staple, Northerns. No doubt it improves somewhat the general appearance of the mixture but from the point of staple the admixture of Sircar cotton is undesirable.

(4) Sowings of pure Sircar cotton-seed are not very large and the total output of pure Sircar cotton is estimated for the new season as within 1,000 bales at 400 lb. Mixed sowings of Sircar and ordinary White Northerns are, ar by year. Owing to the shortage of cotton-seed supplies last autumn, about 3,000 bag cotton-seed have been imported and sown in the Nandyal cotton circle and I am rather afraid regarding its influence on the general quality of white Nandyals.

(b) "*Deshi*" long staple cotton.5303. *Varieties.*—There are two distinct types of *deshi* long staple cotton—

(a) Ordinary Western *Hingari* and (b) ordinary Northerns. There is yet another kind of long staple cotton grown in our districts, viz., Cambodia cotton, imported, as I am told, from the Tiruppur side.

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Mr. B. ZEINER.

[Continued.]

3594. *Cambodia, Western and Eastern*.—This cotton is generally known here about as foreign cotton. Java cotton is also known by this name, and is of the same kind. The former originates from plantations established in Java by the Dutch and is said to be the black seed represents the kind cultivated in the West Indies for a long time. The black seed is already sown together.

(2) Western and Eastern. The seed is of the same kind, but the seed is of a different color. The seed is of a different color, but the seed is of the same kind. The seed is of a different color, but the seed is of the same kind.

(3) *White Northern*. The seed is of the same kind, but the seed is of a different color. The seed is of a different color, but the seed is of the same kind. The seed is of a different color, but the seed is of the same kind.

(4) *White Northern*. The seed is of the same kind, but the seed is of a different color. The seed is of a different color, but the seed is of the same kind. The seed is of a different color, but the seed is of the same kind.

(5) *White Northern*. The seed is of the same kind, but the seed is of a different color. The seed is of a different color, but the seed is of the same kind. The seed is of a different color, but the seed is of the same kind.

(6) *Red Northern*. The seed is of the same kind, but the seed is of a different color. The seed is of a different color, but the seed is of the same kind. The seed is of a different color, but the seed is of the same kind.

(7) The seed is of the same kind, but the seed is of a different color.

(8) *White Northern*.

(9) *Red Northern*.

(10) *White Northern*.

(11) It is said that when the seed is of the same kind, but the seed is of a different color. The seed is of a different color, but the seed is of the same kind. The seed is of a different color, but the seed is of the same kind.

3595. *Cambodia*.—This seed is of the same kind, but the seed is of a different color. The seed is of a different color, but the seed is of the same kind. The seed is of a different color, but the seed is of the same kind.

(2) The quality of Cambodia is of the same kind, but the seed is of a different color. The seed is of a different color, but the seed is of the same kind. The seed is of a different color, but the seed is of the same kind.

	Kapas production	Percent- age of lint.	Approx- imate profits.
	R.	percent.	Rs.
Cambodia (Western area)	220	34	60
Do (Northern area)	240	34	70
Hyacin	210	28	55

I have pointed out that Cambodia is susceptible to diseases causing prominent stains in the quality but so are American and African cotton and if either of the two latter kinds could be substituted by Cambodia, there would be at least a decided gain in the quality of cotton.

3596. *Improvement of Western and Northern cotton cultivation in regard to quality*.—On the whole, I think, although I cannot speak with expert knowledge on this point, that improvements should be attempted with American cotton in the first instance. With better seed selection and more scientific cultivation, the yield of the American plant could probably be improved. This, of course, does not mean that experiments with acclimated exotic varieties or new exotic kinds should be entirely abandoned. If something for instance could be done to convert soil at present occupied by Western or Northern American into soil suitable for garden crops or improved dry crops, I am inclined to think that the production of Cambodia cotton in our districts would vastly increase.

3598. (18) *Uses of seed and seed selection*.—Seed from improved types are much preferred for sowing but this kind of seed is getting scarcer year by year with the steady increase of ginning factories. Hence the majority of cultivators have to use the seed turned out by these factories. This is unsatisfactory owing to the large mixing of several kinds of types while ginning and owing to careless ginning in general. A larger sale on easy terms of pure seed by Government farms and seed-traders in the principal markets would greatly promote the further improvement of standard qualities. It might also put a stop to occasional unscrupulous habits of individual cotton seedholders when disposing their seeds to ready cultivators.

3599. (19) *Attitude of buyers to improved cottons*.—It is perhaps true that the trade ordinarily do not encourage sufficiently purchasers of new styles of cotton. New types are not easily placed by the trade and in our districts the quantities available of new species of cotton are very small and holders besides are selling their parcels so sporadically that firms cannot make up any decent lots within a reasonable time and in consequence they cannot afford paying premiums on the few bales received from time to time. If owners of new kinds of cotton would combine and sell simultaneously not less than fifty bales total at a time, I am certain that competition would ensure proper premiums for the cultivators. This is amply certified by the gradually increasing premiums paid on Cambodia cotton in these districts.

3610. (17) *Prevention of mixing of different varieties*.—Mixing commences already in the fields: in some cases, the adulteration is done deliberately, in others, by indifference or because it is practically impossible to prevent mixed sowings. For instance, in certain regions of the Bellary district where the supplies

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Mr. B. ZEINDLER.

[Continued.]

living in the pressing station are dependent on the town brokers who will get the cotton pressed for them and advance them money till the full settlement is made by the firm after the delivery of the pressed bales. In the ready markets, any dealer (from villages or otherwise) may bring his cotton, sell it and receive its full value then and there. The position for the village dealer selling on the full pressed system is even more accentuated in the heart of the season when stocks for pressing accumulate heavily in the press factories. Then these dealers will have to await their pressing turns, sometimes for weeks, and hence as a rule the villagers prefer selling to brokers only instead of direct to firms, and in consequence they do not always get the full value of their cotton as for instance at an auction sale in an open market. Open markets, therefore, appear to me as being badly required in all the larger pressing stations for Northerns. I believe that the firms are not against such a scheme, and as a matter of fact, I know that for instance at Nandyal one of them would be agreeable to lease the municipality a suitable plot near the railway station on a nominal rent for an open mart. Marketing hours should be fixed for all open markets in such a way as to allow of selection and weighing of cotton purchased still on the same day.

III.—STATISTICAL.

5314. (33) Improvement of cotton forecast.—I have pleasure in stating that there has been a vast improvement of late in the usual sowing and outturn forecasts for Westerns and Northerns. These forecasts have to be made up rather early and whilst the dates for publication probably fit in very well for Northern India, forecasts in Madras have to be based chiefly on guess work with the result that the first reports occasionally are contradictory to prevailing local opinions. Estimates for these parts are usually a difficult task owing to imports from the Nizam's Dominions into our Western markets varying very largely in sympathy with the relative price parities in our markets and Raichur during the seasons.

IV.—MANUFACTURE.

5315. (42) Effect on machinery of replacement of short staple cotton by long staple.—Assuming that it were found possible to replace any large quantity of short staple cotton by long staple cotton, no substantial alteration in our machinery would be necessary. All that would have to be done is to adjust gin knives and rollers and probably to increase the size of the bale in the press as long staple cotton cannot stand too great a pressure without the staple suffering.

Mr. BERNARD ZEINDLER called and examined.

5316. (President.) I have been stationed for about five years altogether in Nandyal and at Guntur, Adoni and Guntakal. The principal cottons in this tract are Westerns and Northerns. In Adoni and Bellary, Akola cotton is getting mixed with the long staple cotton. It is not mixed with the local cotton here at Nandyal. We have a short staple cotton called Dharwar American in this tract. "Sircar" Northern is also a short staple cotton. In staple, it is fifteen to sixteen millimetre, or even a little less. It does not pass the test of Westerns in staple.

5317. My principal objection as regards the cotton that comes to the market is that there is much mixture of short and long staple cotton. In some places where we have ginneries we buy *kapas* but mostly we buy ready cotton. Westerns cotton is very badly ginned. The cultivators are very careless about picking it and it is a very dirty cotton. We have ginneries of our own in Guntakal and Adoni. Mixing is increasing very much. I dare say that it is the intensive competition during the last four years which has caused this. The Japanese have now come into the market and so there are more buyers and there is more leniency in selection. Mixing is done deliberately in the ginning factories, at least in certain parts. Of course there are a good many ginning factories, which gin cotton pure in order to keep up their reputation. Exporting firms for instance always gin cotton pure. We do very little ginning for outsiders. When we do so it is more or less for our own constituents who will sell the ready cotton to us. We gin chiefly in Guntakal and there is very little mixing done there as there is only one variety there. The *mungari* (i.e., Akola cotton) does not do well on black soils.

5318. (Mr. Roberts.) I am strongly of opinion that the system of forward contracts is a bad one. It has ruined very many dealers and it will be the cause of many failures this year. This year, the Northerns cotton has been sold forward to the extent of about sixty to eighty per cent. of the estimated crop. The crop was originally estimated as a bumper one, but it may turn out to be much less. There may be more rain and much *kapas* may be spoilt. We had very heavy rains at the end of February and the estimate for the whole crop was reduced from 1½ lakhs to one lakh of bales on account of this rain. The chief reason against buying forward is that the people may not be able to deliver. Forward contracts tend to deprive the cultivator of the real value of his cotton, especially in cases where the whole market is in the hands of a few big brokers. For instance, at Nandyal and at Tadpatri, there are only four to six brokers who sell the whole cotton crop. These people may force the cultivators to sell forward against their liking. There is another point which is that with forward selling, there is no inducement to the cultivator to bring a superior quality of cotton. They have no inducement except to bring cotton that will pass against the contracts which have been made. In an open market, they would try to bring better cotton and to get better rates. My suggestion is that a heavy stamp duty should be levied on forward contracts as an experimental measure. I think that the smaller dealers would probably not like to pay the stamp duty. A good many dealers have been selling cotton forward but they have never seen cotton and they merely speculate in it.

5319. I would advocate the standardization of weights as in Berar. I would take as a unit the Bombay *khandi* if possible. Then we can compare prices with the Bombay rates. In Adoni, Bellary and Guntakal, we have got the *nag* system and only six to eight stones are used for weighing. The *nag* is twelve maunds, of four *dadiams* of twelve *seers*. So there are six maund stones, four maund stones, three maunds, two maunds, one maund, two *dadiam* stones and six *seer* stones. If we had the Bombay *khandi*, a lot of stones could be done away with. Small dealers would understand the weighing better if there were fewer stones. The cultivators would be able to market their cotton easier if there were more uniformity. During the course of the season, the stones wear out to a certain extent. The weights are occasionally inspected by the Sub-Magistrate.

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Mr. ROBERT P. GILL.

[Continued.]

5320. As far as I can make out, Dharwar American at Tadpatri is always grown mixed with White Northerns; it does not come into the market by itself. I have never heard of it coming in separately. We can distinguish it very well by its white colour and by the stains and the short staple. As I said before, *mungari* is not grown in places where American cotton is grown. *Mungari* and American give the same results and so in the places where *mungari* is grown the people are not taking to American. There is, of course, a chance of *mungari* spreading in the Northerns tracts, for instance, Kurnool. American seed is imported from Dharwar every year to Tadpatri, Bellary and Nandyal. At Nandyal 3,500 bags of 156 to 160 lbs. each have been imported this season. That is enough seed for about 30,000 acres. The cultivator gets Re. 1 to Rs. 3 more per *nag* of 312 maunds of *mungari kapas* than he does for *hingari kapas*. *Hingari* lint is worth Rs. 20 more per Bombay *lhandi* or Rs. 8 per *nag* than pure *mungari* but the price per *nag* of *kapas* is Rs. 3 less. The whole *mungari* crop is not more than seven or ten per cent. of the *hingari* crop. The higher price of the *mungari kapas* is largely due to the fact that there is such a small proportion of it and it gives a better outturn. The *kapas* of the mixture fetches a higher price on account of its higher lint percentage. Mixing is done already in *kapas*. Sometimes the various *kapas* cannot be kept separately by the ryots owing to mixed sowings. It is mixed in the houses of the ryots. *Mungari* cotton is the earlier crop. As I have said *mungari kapas* is worth Rs. 3 per *nag* more than *hingari*. The cultivator only mixes *kapas*. He gets less in the market for pure *hingari kapas*, so he takes a small proportion of *hingari kapas* and mixes it with a larger proportion of *mungari kapas* in order to get for the mixture the same rate as for pure *mungari*. In other words he uses the long staple to adulterate the short staple, if that can be called adulteration.

5321. I have some experience of the Sircar Northerns cotton which the Department has been putting out. I bought it at the Nandyal farm. In 1903, I bought the whole outturn of the farm, forty to fifty bales of Sircar cotton pure and was able to place it in Bombay. In Bombay, however, it was not very much favoured because the staple was a little irregular and also a little weak. The following year I bought another fifty bales and passed it on to a mill which was satisfied that it was a clean cotton but remarked that the staple was short. After that I could not find any buyers who would pay more for it than for ordinary Westerns. Ordinarily Northerns fetch higher rates than Westerns and when I say that they would not pay a higher rate for Sircar cotton than for Westerns it means that they were offering a lower rate than for Northerns growing in the same district. We were very satisfied with the cleanliness of the cotton. I think Sircar cotton would not have many chances in a place like Bombay where they get such large quantities of very clean cotton from the Berars. Northerns here are usually a little dirty. As firms would not buy Sircar cotton any longer, the people started to mix with it. I do not think that at present it is as good as Northerns.

5322. In Nandyal we have red cotton of beautiful staple. As a rule, this red cotton fetches a very little lower rate than White Northerns. This season the rate is the same for both, and so people are bringing in short staple red *kapas* from Ongole, Nellore, Guntur and Markapur by rail getting it ginned here and passing it off as Red Northerns.

5323. (Mr. Hodgkinson.) Cotton comes in in a dirty condition chiefly on account of the bad ginning and afterwards because it is not sufficiently cleaned in the presses. Exporters do care about this because they have to take their cotton to Europe to compete with cotton there but the people who send their stuff to Bombay and sell it thereon its own merits do not care so much about cleanliness. We fix a rate for good *kapas* and make allowances for inferior cotton. We do pay premium for clean cotton. For cotton from districts from which we get decent cotton, we pay Re. 1 to Rs. 2 per *nag* more. There has been much deterioration in cotton during the last four or five years not so much on account of bad picking in the fields on account of the subsequent treatment of *kapas* or lint. I think that if there were an open market, at Nandyal as suggested or favoured by several Nandyal (European) Sub-Collectors, larger lots of good *kapas* or cotton would come in and the dealers would always get higher prices for it. Farm *kapas* carefully picked and ginned has a loss of only eight per cent. in the blow room. I think that the buyer up country would hardly be inclined to pay an adequately high price for cotton with lower blow room loss as he is not an expert as a rule. By up country buyers, I mean the mills. If cotton were sold direct to the mills they might pay the full price for clean cotton but, even then, I do not think that the extra price would compensate for the trouble and expense owing to mills having not much use or liking for small quantities of special varieties. I mentioned that stone weights were used in the Westerns area.

5324. Here in Nandyal in the Northerns tract, iron weights are also used. Stone weights are used and chipped. Buyers quickly find out if bad weight is given. Iron weights are preferable to stone weights, and I would recommend the abolition of stone weights and the substitution of iron weights. I would recommend standard weights.

5325. It would be a great boon to the cotton trade if the roads in this tract could be improved. Especially during the monsoon, i.e., in May, June and July the people find it very difficult to bring their cotton to the market as the roads are so bad in this tract. A railway from Yerraguntla to Nandyal would improve matters.

Mr. ROBERT P. GILL, Guntur.

EXAMINED AT GUNTUR, FEBRUARY 28TH, 1918.

Written statement.

5326. General description of Coconada cotton.—I have had 43 years' experience in the cotton trade in Guntur, the particular grade of cotton being a short staple *deshi* known in the market as Coconada. The distinctive characteristic of this cotton is its colour, which, though called red, is a dark brownish red colour. It also meets with a special demand owing to its reputation as a clean cotton. It derives its name of Coconadas from the fact that prior to the introduction of the machine gin, it was almost exclusively shipped at the port of Coconada though the seedling of the cotton lies in the Kistna and Guntur districts.

(2) Before the introduction, about thirty years ago, of machine ginning, the market now we have the two grades known as Ordinary Fair and Coconada. The Coconada is a Ginned Coconadas which stand in proportion at about one-fourth of the total cotton produced in the district.

Mr. L. J. F. 1902.

(Continued.)

The following table shows the quantity of cotton ginned at the various ginning factories in the district of Bangalore for the year 1901-02, and the quantity of cotton ginned at the same factories for the year 1900-01.

No.	Name of Ginning Factory	1901-02			1900-01	Total quantity ginned in bales
		Quantity ginned in bales	Quantity ginned in pounds	Value in Rs. and Annas		
1	Bangalore Ginning Factory	1,100	17,600	1,10,000	1,00,000	1,00,000
2	" "	1,000	16,000	1,00,000	90,000	
3	" "	1,200	19,200	1,20,000	1,10,000	
4	" "	1,300	20,800	1,30,000	1,20,000	
5	" "	1,400	22,400	1,40,000	1,30,000	
6	" "	1,500	24,000	1,50,000	1,40,000	
7	" "	1,600	25,600	1,60,000	1,50,000	
8	" "	1,700	27,200	1,70,000	1,60,000	
9	" "	1,800	28,800	1,80,000	1,70,000	
10	" "	1,900	30,400	1,90,000	1,80,000	
11	" "	2,000	32,000	2,00,000	1,90,000	2,00,000
12	" "	2,100	33,600	2,10,000	2,00,000	
13	" "	2,200	35,200	2,20,000	2,10,000	
14	" "	2,300	36,800	2,30,000	2,20,000	
15	" "	2,400	38,400	2,40,000	2,30,000	
16	" "	2,500	40,000	2,50,000	2,40,000	
17	" "	2,600	41,600	2,60,000	2,50,000	
18	" "	2,700	43,200	2,70,000	2,60,000	
19	" "	2,800	44,800	2,80,000	2,70,000	
20	" "	2,900	46,400	2,90,000	2,80,000	
21	" "	3,000	48,000	3,00,000	2,90,000	3,00,000
22	" "	3,100	49,600	3,10,000	3,00,000	
23	" "	3,200	51,200	3,20,000	3,10,000	
24	" "	3,300	52,800	3,30,000	3,20,000	
25	" "	3,400	54,400	3,40,000	3,30,000	
26	" "	3,500	56,000	3,50,000	3,40,000	
27	" "	3,600	57,600	3,60,000	3,50,000	
28	" "	3,700	59,200	3,70,000	3,60,000	
29	" "	3,800	60,800	3,80,000	3,70,000	
30	" "	3,900	62,400	3,90,000	3,80,000	
31	" "	4,000	64,000	4,00,000	3,90,000	4,00,000
32	" "	4,100	65,600	4,10,000	4,00,000	
33	" "	4,200	67,200	4,20,000	4,10,000	
34	" "	4,300	68,800	4,30,000	4,20,000	
35	" "	4,400	70,400	4,40,000	4,30,000	
36	" "	4,500	72,000	4,50,000	4,40,000	
37	" "	4,600	73,600	4,60,000	4,50,000	
38	" "	4,700	75,200	4,70,000	4,60,000	
39	" "	4,800	76,800	4,80,000	4,70,000	
40	" "	4,900	78,400	4,90,000	4,80,000	
41	" "	5,000	80,000	5,00,000	4,90,000	5,00,000
42	" "	5,100	81,600	5,10,000	5,00,000	
43	" "	5,200	83,200	5,20,000	5,10,000	
44	" "	5,300	84,800	5,30,000	5,20,000	
45	" "	5,400	86,400	5,40,000	5,30,000	
46	" "	5,500	88,000	5,50,000	5,40,000	
47	" "	5,600	89,600	5,60,000	5,50,000	
48	" "	5,700	91,200	5,70,000	5,60,000	
49	" "	5,800	92,800	5,80,000	5,70,000	
50	" "	5,900	94,400	5,90,000	5,80,000	
51	" "	6,000	96,000	6,00,000	5,90,000	6,00,000
52	" "	6,100	97,600	6,10,000	6,00,000	
53	" "	6,200	99,200	6,20,000	6,10,000	
54	" "	6,300	100,800	6,30,000	6,20,000	
55	" "	6,400	102,400	6,40,000	6,30,000	
56	" "	6,500	104,000	6,50,000	6,40,000	
57	" "	6,600	105,600	6,60,000	6,50,000	
58	" "	6,700	107,200	6,70,000	6,60,000	
59	" "	6,800	108,800	6,80,000	6,70,000	
60	" "	6,900	110,400	6,90,000	6,80,000	
61	" "	7,000	112,000	7,00,000	6,90,000	7,00,000
62	" "	7,100	113,600	7,10,000	7,00,000	
63	" "	7,200	115,200	7,20,000	7,10,000	
64	" "	7,300	116,800	7,30,000	7,20,000	
65	" "	7,400	118,400	7,40,000	7,30,000	
66	" "	7,500	120,000	7,50,000	7,40,000	
67	" "	7,600	121,600	7,60,000	7,50,000	
68	" "	7,700	123,200	7,70,000	7,60,000	
69	" "	7,800	124,800	7,80,000	7,70,000	
70	" "	7,900	126,400	7,90,000	7,80,000	
71	" "	8,000	128,000	8,00,000	7,90,000	8,00,000
72	" "	8,100	129,600	8,10,000	8,00,000	
73	" "	8,200	131,200	8,20,000	8,10,000	
74	" "	8,300	132,800	8,30,000	8,20,000	
75	" "	8,400	134,400	8,40,000	8,30,000	
76	" "	8,500	136,000	8,50,000	8,40,000	
77	" "	8,600	137,600	8,60,000	8,50,000	
78	" "	8,700	139,200	8,70,000	8,60,000	
79	" "	8,800	140,800	8,80,000	8,70,000	
80	" "	8,900	142,400	8,90,000	8,80,000	
81	" "	9,000	144,000	9,00,000	8,90,000	9,00,000
82	" "	9,100	145,600	9,10,000	9,00,000	
83	" "	9,200	147,200	9,20,000	9,10,000	
84	" "	9,300	148,800	9,30,000	9,20,000	
85	" "	9,400	150,400	9,40,000	9,30,000	
86	" "	9,500	152,000	9,50,000	9,40,000	
87	" "	9,600	153,600	9,60,000	9,50,000	
88	" "	9,700	155,200	9,70,000	9,60,000	
89	" "	9,800	156,800	9,80,000	9,70,000	
90	" "	9,900	158,400	9,90,000	9,80,000	
91	" "	10,000	160,000	10,00,000	9,90,000	10,00,000
92	" "	10,100	161,600	10,10,000	10,00,000	
93	" "	10,200	163,200	10,20,000	10,10,000	
94	" "	10,300	164,800	10,30,000	10,20,000	
95	" "	10,400	166,400	10,40,000	10,30,000	
96	" "	10,500	168,000	10,50,000	10,40,000	
97	" "	10,600	169,600	10,60,000	10,50,000	
98	" "	10,700	171,200	10,70,000	10,60,000	
99	" "	10,800	172,800	10,80,000	10,70,000	
100	" "	10,900	174,400	10,90,000	10,80,000	
101	" "	11,000	176,000	11,00,000	10,90,000	11,00,000
102	" "	11,100	177,600	11,10,000	11,00,000	
103	" "	11,200	179,200	11,20,000	11,10,000	
104	" "	11,300	180,800	11,30,000	11,20,000	
105	" "	11,400	182,400	11,40,000	11,30,000	
106	" "	11,500	184,000	11,50,000	11,40,000	
107	" "	11,600	185,600	11,60,000	11,50,000	
108	" "	11,700	187,200	11,70,000	11,60,000	
109	" "	11,800	188,800	11,80,000	11,70,000	
110	" "	11,900	190,400	11,90,000	11,80,000	
111	" "	12,000	192,000	12,00,000	11,90,000	12,00,000
112	" "	12,100	193,600	12,10,000	12,00,000	
113	" "	12,200	195,200	12,20,000	12,10,000	
114	" "	12,300	196,800	12,30,000	12,20,000	
115	" "	12,400	198,400	12,40,000	12,30,000	
116	" "	12,500	200,000	12,50,000	12,40,000	
117	" "	12,600	201,600	12,60,000	12,50,000	
118	" "	12,700	203,200	12,70,000	12,60,000	
119	" "	12,800	204,800	12,80,000	12,70,000	
120	" "	12,900	206,400	12,90,000	12,80,000	
121	" "	13,000	208,000	13,00,000	12,90,000	13,00,000
122	" "	13,100	209,600	13,10,000	13,00,000	
123	" "	13,200	211,200	13,20,000	13,10,000	
124	" "	13,300	212,800	13,30,000	13,20,000	
125	" "	13,400	214,400	13,40,000	13,30,000	
126	" "	13,500	216,000	13,50,000	13,40,000	
127	" "	13,600	217,600	13,60,000	13,50,000	
128	" "	13,700	219,200	13,70,000	13,60,000	
129	" "	13,800	220,800	13,80,000	13,70,000	
130	" "	13,900	222,400	13,90,000	13,80,000	
131	" "	14,000	224,000	14,00,000	13,90,000	14,00,000
132	" "	14,100	225,600	14,10,000	14,00,000	
133	" "	14,200	227,200	14,20,000	14,10,000	
134	" "	14,300	228,800	14,30,000	14,20,000	
135	" "	14,400	230,400	14,40,000	14,30,000	
136	" "	14,500	232,000	14,50,000	14,40,000	
137	" "	14,600	233,600	14,60,000	14,50,000	
138	" "	14,700	235,200	14,70,000	14,60,000	
139	" "	14,800	236,800	14,80,000	14,70,000	
140	" "	14,900	238,400	14,90,000	14,80,000	
141	" "	15,000	240,000	15,00,000	14,90,000	15,00,000
142	" "	15,100	241,600	15,10,000	15,00,000	
143	" "	15,200	243,200	15,20,000	15,10,000	
144	" "	15,300	244,800	15,30,000	15,20,000	
145	" "	15,400	246,400	15,40,000	15,30,000	
146	" "	15,500	248,000	15,50,000	15,40,000	
147	" "	15,600	249,600	15,60,000	15,50,000	
148	" "	15,700	251,200	15,70,000	15,60,000	
149	" "	15,800	252,800	15,80,000	15,70,000	
150	" "	15,900	254,400	15,90,000	15,80,000	
151	" "	16,000	256,000	16,00,000	15,90,000	16,00,000
152	" "	16,100	257,600	16,10,000	16,00,000	
153	" "	16,200	259,200	16,20,000	16,10,000	
154	" "	16,300	260,800	16,30,000	16,20,000	
155	" "	16,400	262,400	16,40,000	16,30,000	
156	" "	16,500	264,000	16,50,000	16,40,000	
157	" "	16,600	265,600	16,60,000	16,50,000	
158	" "	16,700	267,200	16,70,000	16,60,000	
159	" "	16,800	268,800	16,80,000	16,70,000	
160	" "	16,900	270,400	16,90,000	16,80,000	
161	" "	17,000	272,000	17,00,000	16,90,000	17,00,000
162	" "	17,100	273,600	17,10,000	17,00,000	
163	" "	17,200	275,200	17,20,000	17,10,000	
164	" "	17,300	276,800	17,30,000	17,20,000	
165	" "	17,400	278,400	17,40,000	17,30,000	
166	" "	17,500	280,000	17,50,000	17,40,000	
167	" "	17,600	281,600	17,60,000	17,50,000	
168	" "	17,700	283,200	17,70,000	17,60,000	
169	" "	17,800	284,800	17,80,000	17,70,000	
170	" "	17,900	286,400	17,90,000	17,80,000	
171	" "	18,000	288,000	18,00,000	17,90,000	18,00,000
172	" "	18,100	289,600	18,10,000	18,00,000	
173	" "	18,200	291,200	18,20,000	18,10,000	
174	" "	18,300	2929			

Madras.]

Mr. A. A. STATHACOPOULO.

5331. *Type of press and size of bale.*—The makes of presses in use are principally the Nasmyth Wilson's and the Cummin's patent, the size of the bale being about seven cubic feet for export and about nine cubic feet for mill bales.

Mr. R. P. GILL called and examined.

5232. (President.) I have had ten years' experience in Mincing Lane, and 43 years' experience of the cotton trade in Guntur. There is only one kind of cotton here, machine ginned and hand ginned Red Coconadas. My experience of Coconada is that it has deteriorated very much indeed of late years. It is not a long staple cotton. The staple is from $\frac{1}{2}$ inch to $\frac{3}{4}$ inch. It varies in different taluks. Cotton grown in the Palnad Taluk in the north-west of the Guntur District has a stronger staple than that of any of the other taluks. As long as the colour is intact and it is not mixed with white, the Palnad cotton is fairly good though it is very leafy. The characteristic of the Palnad Taluk is that it is leafy. It is not as well picked as it should be. There has been very great deterioration in cleanliness. I do not think there has been much deterioration in the staple. There is no trace of mixture of other cottons with Palnad cotton in the field. There is only one ginning factory in the Palnad Taluk and no cotton comes in there from other places. It is desirable that this cotton should be brought back to its old pitch of colour and cleanliness. It is difficult to explain the alteration in the colour. I can only say that years ago the colour was much darker and the cotton was not so dull and such dirty looking stuff as it is now. I put the deterioration down to two causes; one is bad ginning and the other is forward buying. There is a good deal of forward buying. Some sort of cotton has to be delivered against the contract.

5333. I think the restriction of the movement of cotton from one place to another except in the form of fully pressed bales would be useful. The ginning factories are out to make money. I am not very optimistic about the effect of licensing gineries. I do not see how the under-paid inspector, whose employment such a system would involve, would be kept under control. I should be delighted if anything could be done but whether it is practicable or not I do not know. The gineries in this tract are rather small; there are only ten to twelve gins in them as a rule. Hand ginning is on the decrease.

5334. (Mr. Hodgkinson.) Very little Coconada goes to Madras now. At present almost all of it goes to Bombay since steamers stopped calling at Coconada. I do not know what is being done with it at Bombay; it used to be exported largely from Coconada to Havre and to London. Mincing Lane was the principal market for it. I used to work with Messrs. R. J. Rouse and Company in Mincing Lane. Coconada cotton is seldom seen in Liverpool now.

5335. As I have mentioned in my written evidence, some years ago, the distribution of selected seed was started but it did not last.

5336. The cotton is picked by hand by a few women at a time. I do not think that they pick the whole field straight away. I have not sufficient experience to say that it would be a good thing if the cotton were picked early in the morning.

5337. (Mr. Roberts.) This white cotton which is brought in comes from Tuni. It is also brought in from Adanki which is on the borders of Nellore but most of it comes from Tuni. The worst cotton that we get is from Adanki and the best cotton from Palnad. There is a larger acreage in the Palnad Taluk than in any other. According to the last figures Palnad had 63,746 acres, Sattanapalle 32,000 acres, Vinukonda 23,000 acres and Guntur only 17,000 acres to 18,000 acres.

5338. As regards the efforts made to improve the cotton by giving out selected seed, I think they were made by the Agricultural Department through the Collector about twelve years ago. The seed given out was merely selected factory seed. I do not know the difference in price between Coconadas and Northernns. In this District, one can only buy Coconadas.

5339. The establishment of open markets would be the best system theoretically. A firm sends its agent an order for a thousand bales: the agent cannot buy a thousand bales at a time so he has to go to two or three people. If he has to carry out his firm's order, he has got to get somebody who will take the risk. He cannot buy from the cultivators so the middleman comes in. The cultivators in various taluks have their agents in Guntur and send them instructions to sell so much on their account but that is done generally later on in the year when the cotton begins to come in. The cultivators are beginning to sell through agents in Guntur but they only sell forward a month or so beforehand as they see their crop coming on. They have been holding out for the best profit. The cultivators do get advances. It would be a very good thing if there were a very heavy stamp duty on future contracts. I consider that future buying is objectionable.

5340. I had a cotton opener in my pressing factory but I have never seen them in use in a ginning factory. I have not seen any kapas openers.

5341. (Mr. Hodgkinson.) It is true that unless there is forward buying the millowners cannot cover themselves but that is another matter. What I maintain is that forward buying as practised here is a bad practice and that it is carried to excess. I do not think that the millowners want to buy in September or October for delivery in May or June next year.

Mr. A. A. STATHACOPOULO, Agent, Messrs. B&N Bros., Guntur.

EXAMINED AT GUNTUR, FEBRUARY 26th, 1913.

5342. *General description of "Northernns" cotton.*—"Northernns" is the denomination of cotton grown in Kurnool, Tadpatri, Prodattur, Nandyal, etc., with chief centre Nandyal and an average crop of 500 lb. per bale of 400 lb. net. There are twenty ginning factories in this district of a capacity of 500 bales each. There are presses in Nandyal, two in Kurnool, two in Tadpatri and two in Prodattur.

(2) The following varieties of Northernns are the most important:—

- | | |
|-------------------------|--|
| (1) Red | (a) Machine ginned and (b) hand ginned |
| (2) Red white | (a) Machine ginned and (b) hand ginned |
| (3) White | (a) Machine ginned and (b) hand ginned |

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Mr. A. A. STATHACOPOULOU.

[Continued.]

drought is beneficial for the other. I noticed that cotton grown in black soil is bulky and of brighter colour whilst red soil produces comparatively redder stuff but Guntur and Bezvada cotton plantations are grown in red and black soil. On the whole, no irrigation is necessary to help the growth of cotton especially on the Godavari section, where the moisture is more than enough.

5351. *Deterioration of Coconada cotton and its causes.*—The quality of Coconadas is gradually deteriorating both as regards colour, staple and cleanliness and I attribute it to the following reasons:—

- (1) The consecutive sowing of cotton on the same land in some places.
- (2) To the ryots not paying particular attention to the quality of seed which is more or less adulterated with white and produces cotton of an uneven and dull colour with staple irregular.
- (3) To the absence of any official help and guidance.
- (4) To the careless working of the ginning factories of the district; out of forty ginning factories in my district, I had been able to see three or four only working more or less satisfactorily; I remember that the first arrivals for the season 1917 were very badly ginned on the whole with the result that the cotton could not fetch its full price; then I issued a circular to all gin factories and it was also verbally explained to many managers how the working of the gins depended a good deal on the way the rollers were grooved but few managers took any steps.

(2) I do not think the exporters can do much to help the Government because they buy the cotton in loose and not in the shape of *kapas*. We have penalized a big proportion of the cotton tendered to us as it was mixed with white stuff but after all those who get finally such cotton have to accept it as it is, as they know the conditions. I do not know what the other firms are doing here as regards white mixtures but we feel great difficulty to work when petty merchants coming from Bombay to buy small quantities for certain mills are not particular about such details and they simply take delivery of cotton rejected by firms.

5352. *Suitabilities of existing varieties.*—In conclusion, my opinion is that in this district any other long stapled cotton is unsuitable and what is required only is to improve the quality of the present variety.

Mr. A. A. STATHACOPOULOU called and examined.

5353. (*Mr. Roberts.*) The average ginning percentage of Coconada cotton is 22 but it can go up to 25. We do not purchase *kapas*; we buy generally ginned cotton. The ginning percentage differs in different places but the average is 22. The best system is to buy *kapas* but it is very difficult in this district. We are hoping to be able to introduce it however. We started it last year and this year we hope to buy more *kapas*. I consider the staple of Coconadas to be very good. The staple of the best cotton which comes from Palnad is up to an inch at the best. The average staple is $\frac{1}{2}$ inch to $\frac{3}{4}$ inch or about $\frac{2}{3}$ ths of an inch. The staple is about the same as Northerns but the average of Red Northerns is better on the whole. I shall call the staple of Northerns an inch at best; the average is three-fourths inch.

5354. I have had six years' cotton experience in Egypt, two years in Delhi, one in the Hubli district, one in the Tinnevely district and just one and a half in this district. There are vast differences between the methods of business in Egypt and the ways prevalent here. There are many Europeans interested in cotton cultivation in Egypt. There are no Europeans interested directly in cotton cultivation here. In Egypt the local merchants always buy *kapas*. The merchants who buy *kapas* and send it to Alexandria are nearly all European firms which have their own experts, who classify the cotton according to its own merits and have the different classes ginned separately. They then send it to Alexandria for shipment to England and other places. The best point is that it is *kapas* which is bought. The buyers have the gins to try the outturn and they are able to get better results in the way of staple every now and then because the Europeans themselves are cultivators. We have no European cotton planters here; planters here have taken up tea, etc. The methods in Egypt are more scientific. As regards the arrangement for the destruction of boll worms, the Government have issued leaflets to the cultivators in which everything is explained by expert inspectors. There is absolutely nothing in the way of compulsory markets; each firm buys *kapas* according to its requirements. The firms are directly in touch with the landholders. The small landholders amalgamate their cotton with the cotton belonging to the big landholders, and the whole of the cotton is marketed together in big lots. The firms offer their prices and the firm offering the highest price gets the cotton. This is all done when the cotton is ready. Very few firms buy forward. They prefer to buy ready, because, on account of their commitments to Europe and other places, they must see the cotton which they are going to get.

5355. One cannot secure quality unless one buys ready cotton. Nearly the whole of the business done in my district is for forward buying. People sell without having anything for sale and they take the chance of the market. When the market is going up, they have to buy in order to deliver. Some of the middlemen are substantial men but generally they are dependent on those who sell to them. Sometimes the cultivators themselves speculate. In the market, there is a tendency to supply the lower quality. When the market is against them, the middlemen buy at any rate in order to cover themselves because if they do not cover themselves and fulfil their obligations to the firms, the firms may have to buy on their own account. And if the firms buy on their own account, it means that the middlemen lose even more money.

5356. We generally buy the fair average quality of the district. The system of forward buying makes it difficult to differentiate between good and bad cotton but there are many dealers who guarantee to us that they will deliver cotton from a certain district of a certain quality usually better than the average. That has been the custom for many years and is probably because the European firms do not buy *kapas*. The ginning factories are not unwilling to gin on commission. If the European firms bought *kapas*, they could get it ginned here quite easily at reasonable rates. The difficulty is this, that those who have *kapas* have already committed themselves to those who buy for forward delivery or taken loans from them payable in cotton. Another difficulty is that no European firm in this district owns any factory with the exception of Messrs. Volkart Brothers, who have a press in Guntur.

5357. I am sorry to say that we have not got openers. There are two ways of thinking about this detail; one party is against openers on the ground that the staple becomes deteriorated by passing the *kapas* through the opener although it comes out cleaner. In my opinion, it would be better sometimes to risk the staple in order to secure a cleaner quality. In Tinnevely district, *kapas* is passed which has much leaf. The staple of Tinnevely cotton, especially of Cambodia, is much better than the staple of the cotton here. I think we badly want cotton openers in this district because the cotton which we get arrives in a very bad condition as the people are not particular with regard to the ginning. I think it is necessary to have both *kapas* as well as lint openers. The cleaning of cotton on cots is not efficient besides it spoils the quality as sometimes the

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[Continued.]

was considerably reduced and scarcely amounted to 220,000 acres, and the yield only slightly exceeds 40,000 bales of 400 lbs. The sowings for the 1917-18 crop are by no means larger than last year, perhaps even slightly smaller.

5365. (3) *Size of holdings.*—This is, broadly speaking 15 to 25 acres. The number of ryots holding 80; 100 or more acres is comparatively very small, whilst holdings of only five to ten acres are apparently rather frequent.

(2) I am not aware of the average proportion usually put under cotton in a holding. A number of agriculturists probably seldom make changes in their sowing arrangements, whilst the more progressive minded ones no doubt sow most of which they think will pay them best. But every ryots will sow sufficient food-stuffs to keep his family.

(3) No manures for cotton are used in this tract.

5366. (4) *Yields and profits.*—In an average season, under ordinary weather conditions, the yield in seed cotton amount to about 320 to 360 lbs. per acre; in a good season it probably well nigh reaches 400 lbs. I am aware that in very well situated fields, with careful cultivation, 450 lbs. and more have been obtained, under brilliant weather conditions. The proportion of lint to seed cotton is about four to one, i.e., it varies between seventy and ninety lbs. per acre.

5367. (7) *Conditions affecting increase in area.*—The main factor which influences the extent of the yearly cotton sowing is the constellation of prices for the various commodities grown in the district. In our district, cotton, paddy, *juar*, grams, tobacco, chillies, at times also indigo, are the chief crops. Thus at the time of the sowing of the 1917 cotton crop, chillies and indigo fetched very high rates and were therefore much in favour with ryots. The result was that much less cotton was sown. At the time of the sowings for the 1918 crop, in August and September 1917, cotton prices were at a level never reached since the American Civil War (nearly three times as high as the 1914 rates), whilst indigo had depreciated heavily. Everybody then expected a considerable increase in the acreage under cotton, but these expectations have proved wrong, and although indigo has been neglected, more chillies, tobacco and foodstuffs have apparently been sown, to the detriment of the cotton crop. I did not consider the increases in price for these commodities to be as heavy as the increases in cotton rates and thus fairly expected that cotton would be a favourite crop this year. I, therefore, am of the opinion, that other factors than the question of prices influence the agriculturist, one of them being tradition. Certain ryots stick to one or two crops for years, even if at times it would be more profitable for them to grow another commodity, which is higher in price.

5368. (8) *Uses of seed and seed selection.*—The seed, not used for sowing is mostly given to cattle, as it is a very substantial milk-forming food. Little, if any, seed is being exported.

(2) In the parts where hand-ginning is being practised, hand-ginned seed is exclusively used for sowing, which is of a better quality than the seed produced by machine gins. The latter is often damaged on account of careless fitting of the gin knives. Yet, ryots who sell all their seed cotton to the ginners, have to buy their sowing seed from the latter.

5369. *Introduction of other types.*—Apart from the fact that it would be very difficult to induce the ryots of this district to start growing a new kind of cotton. I think it would be in the first line in the interest of all concerned in the trade and manufacture that the quality grown now here be improved, so that mills which heretofore have considered the quality of Coconada cotton too low to suit their requirements may, in course of time, be able to make use of this cotton. Up to now, Lancashire has taken no interest in this cotton. With careful selection of seed, thorough method of cultivation, cautious picking, strict supervision of ginning factories and proper punishment for people adulterating, one ought to be able to improve the quality of the cotton considerably, so as to make it suitable for larger circles than in the past.

5370. *Mixed crop.*—A small proportion of our crop is grown as mixed crop, along with gram, etc. I doubt whether this mixed crop system is really an advantage and should rather think that it must be detrimental to the development and the yield of the cotton plants.

COMMERCIAL ASPECT.

5371. (30) *Local trade customs.*—Contrary to what is the custom in the markets in the Berars and the Central Provinces, where exporters frequently buy *kapas* or cotton from the ryots, mostly through a broker, exporters in the Coconada cotton tract never buy from the producer direct. The agriculturist either sells his cotton (in the case of hand-ginned) to middlemen, dealers in the bazaars or to small petty village merchants. The seed cotton is almost entirely bought up by the ginners, who no doubt partly lend out money to their ryot constituents. I believe, however, that the agriculturists down here are less in the hands of the bazaar people than they are in the Oomra districts.

(2) The ginners are dealers on their own account and it is they who sell the cotton to the exporters. Guntur, Bezvada and Narasaraopet are the three cotton markets of the district, where all the presses and most of the ginning factories are to be found. The owners of outlying ginning factories have their representative in one of the markets.

(3) In the main, two qualities only are being marketed, at Bezvada exclusively machine-ginned, at Guntur mostly machine-ginned and very small quantities of hand-ginned. Narasaraopet arrivals consist to about three-fourth of machine-ginned and one-fourth of hand-ginned, although there have been seasons when practically no hand-ginned was brought to the market.

(4) The system of dealing is the same in all the markets. For each transaction between ginner or commission agent on the one hand and exporter on the other, a contract is made out, the essential parts of which are: the quality (whether machine-ginned or hand-ginned)—

the quantity in *khandis* of 500 lbs.

the price,

the delivery time,

the place (press) where the cotton is to be delivered.

The bulk of the business is done for forward delivery, but contracts are made also in the case of ready cotton.

(5) The seller is bound to deliver within the time stipulated in the contract, but he is at liberty to deliver the full quantity or part thereof before due date as ready. As soon as he delivers, he receives an advance of seventy to eighty per cent. of the contract rate. The balance falls due after the cotton has been pressed and weighed.

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(0) This system of buying is, on the whole, not a bad one and in an ordinary season, when the quality of the arrivals is more or less uniform, works fairly smoothly. Yet, it has also its disadvantages, principally with regard to the quality of the cotton delivered. The contract is considered as fulfilled after the cotton has been pressed and the rate is understood for cleaned cotton, i.e., the dealer has to bear the loss in weight owing to cleaning the cotton before pressing. The buyer has the utmost interest to obtain as clean cotton as possible: the seller tries to get as much weight as possible or to lose as little weight as possible. The less the cotton is cleaned, the better for him.

5372. *Cleaning of Coconada cotton.*—The cleaning work is being done by hand: first the cotton is picked superficially afterwards it passes through the hands of a double row of coolies, who beat it on a cot in the press building. If the cotton under treatment is clean, the work can be done quickly, less coolies need be employed and the press can be fed and worked without interruption. If the cotton to be pressed is of lower class owing to admixture of leaf, dust, *lapas*, etc., a double or treble number of hands is to be engaged, the cotton will have to pass the rows of beating coolies twice or, in exceptional cases, even three times. The buyer, who has to bear the charges for cleaning, is therefore at a loss, for the coolies' wages will be out of proportion to what has been calculated. If the buyer is at the same time press-owner, his position is worse. In the case of clean cotton, 150 bales can be pressed in ten hours with a Cummin's Patent Press and a sufficient number of hands employed. In the case of dirty cotton, only sixty to seventy bales, or even less, may be pressed in a day, whilst the wages are higher, the quantity of lubricants and coal used practically the same as in the case of the 150 bales. Moreover, with any amount of picking and beating, it is difficult, if not impossible, to bring the cotton on the same quality level as the cotton originally in a decent state. The buyer, who pays the same rate for both extremes, is therefore also losing in quality, as he will obtain a lower type for which the spinner pays less.

(2) Cleaning is going on in the presence of both buyers' and sellers' representatives or buyers and seller themselves. Needless to say that, in the case of employees on the buyers' side, bribery is often practised, i.e., the sellers bribe the buyers' people in order to make them lenient with regard to cleaning and weighing. Proof of such practices can scarcely ever be obtained, but suspicions in this respect are none the less not unfounded.

(3) If the cotton in the loose state is dirty and full of impurities, it is either due to careless picking and ginning or to the fact that certain ryots or dealers mix inferior cotton ("undercot") or *lapas* with full intentions, in order to get a better weight. For they know full well that the buyer cannot well reject a lot which is not clearly below what might be called the average of the season, that the cleaning work, however thoroughly it may be carried out, will never remove the impurities and bring the cotton to its original cleanliness, so that the pernicious practice of mixing inferior stuff must be paying in the end (to the ryot or seller).

5373. *Mixing of Coconada cotton.*—Certain ginners mix white cotton, which is brought in small quantities from the neighbourhood of Ongole into the good red *lapas* before ginning. I have never been able to see a pure sample of this white cotton, which is short-stapled, and lowers the quality of Coconada, if admixed. As part of the cotton seed produced in ginning factories is being used for sowing, it is obvious that by and by plants bearing white lint will appear in our fields, among the better stapled red cotton. So far I cannot say that the crop has been spoiled by this mixing practice, as the quantities thus adulterated are not large. Yet, if not stopped in time, the practice will have a bad effect on the quality and the name of Coconada cotton.

5374. *Grades of Coconada cotton.*—The two kinds marketed here are machine-ginned and hand-ginned, the latter chiefly known as "fair red," partly also as "ordinary." The difference between the two qualities lies in the ginning only, as the cotton is originally the same. One-tenth or one-twelfth of the crop, I estimate, is ginned by hand, principally in the Palnad Taluk, where part of the hand-ginned cotton is used by the ryots themselves for home spinning and weaving.

(2) The prominent feature of Coconada cotton is its brown-reddish colour. The more regular the colour, the better the class. The staple measures from three-fourth to seven-eighths of an inch. The cotton has a strong smell, and is on the whole similar to the Red Northern cotton produced on the Nandyal side.

(3) The difference between the price for machine-ginned and hand-ginned cotton varies according to demand, but under ordinary circumstances it is about Rs. 10 per *lhandi* of 500 lbs. Hand-ginned often contains seed and *lapas* and some spinners consider it to be rather of irregular staple.

5375. *Markapur cotton.*—Occasionally cotton from the Markapur Taluk (Kurnool District) is being brought to Guntur and sold here, at times when the constellation of prices induced dealers to sell on this side instead of at Nandyal. This cotton is very clean as compared to Coconada and also slightly better in staple and regularly fetches a premium over machine-ginned Coconada, Rs. 3 to Rs. 6 per *lhandi* of 500 lbs.

5376. *Rajahmundry cotton.*—Properly speaking, this kind of cotton is also grown in the Coconada tract, but the crop is very small, 2,000 to 3,000 bales a year, if not less. It is lower in price than Coconada, owing to inferior staple. Real Rajahmundry ought to be entirely white, but personally I have so far only seen cotton which contained a good deal, 20 to 30 per cent. red cotton. The cotton contains little leaf, but occasionally shows an admixture of seeds. Occasionally a lot of Rajahmundry cotton is brought to Guntur, but most of it is being bought by Coconada firms.

STATISTICAL.

5377. *Improvement of cotton forecast.*—I am under the impression that it is kept rather on the low side. Yet, as the figures are based on the assessment (for ought I know), one should think that they must be fairly accurate. Perhaps the figures might be made more reliable by the Agricultural Department gathering confidential information from the various cotton buyers of some importance in each district.

5378. *Improvement of other statistical information.*—As to the pressing returns, they ought to be made compulsory, if they are not already so.

5379. *Publication of Liverpool and Bombay prices.*—As things are now, a number of native speculators regularly receive telegraphic quotations of Bombay rates, which places them in an advantage over others, who cannot afford the expenditure for the daily telegrams. The publication of the prices ruling in the leading markets would therefore, appear to be a fair institution, as it would place all in the same position. Yet it is doubtful whether it would really be beneficial to the trade on the whole, as it might attract further speculative elements.

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[Continued.]

IV.—MANUFACTURE.

(a) *Ginning and pressing.*

5380. (36) *Type and number of gins and presses.*—My firm own a Cummin's Patent Press at Guntur, which is under my orders. This system has the advantage over the ordinary long bale presses, that a higher density of the bales and consequently a smaller measurement can be obtained, whilst the daily number of bales which can be turned out is higher than with the long bale presses.

5381. (37) *Size of bale.*—The measurements of the bales are as shown below—

	inches.
Breadth of bale	19½
Depth	19
Length	32 to 38

according to requirement. The cubical contents per bale of 400 lbs. thus varies between about 7 and 8½ cubic feet. In hot, dry weather, the cotton cannot be compressed as much as during the monsoon.

5382. *Conditions in ginning factories.*—The ginning factories in this district are all native owned and in many cases in connection with a rice factory. The factories are small for the most-part, twelve to sixteen double roller gins being the rule per factory. I think that in many cases the factories are not too well managed. The profits are as-a rule distributed to the partner to the last penny and little is apparently done with regard to repairs. Thus it happens that in a factory of say twelve gins only six or seven are in working order. It may be that the essential parts are difficult to be obtained at present. I also doubt whether the same well trained gin fitters as in the *Oomras* districts can be found down here.

5383. (38) *Saw gins versus roller gins.*—As far as my knowledge goes, only roller gins, single or double, according to necessity, are being used throughout India, except in the Dharwar District, where saw gins are being worked. I believe that Dharwar cotton has no longer the good name it once used to have in Europe. One of its characteristics is cut fibre and "gin fall."

5384. (40) *Factory labour.*—I have not so far experienced any difficulties in obtaining labour in this district.

5385. (42) *Effect on machinery of replacement of short staple cotton by long staple.*—In the case of the introduction of a long-stapled cotton no change would be necessary in our pressing machinery. Nor do I think that a change in the ginning system would be required.

V.—GENERAL.

5386. (46) *Attitude of buyers to improved cotton.*—Exporters are certainly inclined to pay a premium for long-stapled cotton over short-stapled cotton, as long as this also is up to the latter in class, colour, etc., and spinners are in a position to pay a higher price for it. From the point of view of the ginner, matters look, however, often different. For him, who buys seed cotton from the agriculturist, the outturn in lint is of great importance. Thus, I remember that at Khangaon, the so-called *ghat* cotton, which is of a somewhat better and silkier staple than *gaorani*, fetches, or fetched, Re. 1 less per *bhoja* seed cotton of 392 lbs. *Roseum* cotton, which gives a good ginning outturn, fetches a premium in many cases although its staple is rather short and rough, which will scarcely be suitable for spinning fine counts.

(2) It would therefore seem questionable whether the ryot sees any advantage in growing long-stapled cotton instead of a short-stapled kind. If he has been accustomed to grow the latter for years, and it fetches the same or even a slightly better price than long-stapled cotton, it would no doubt be very difficult to induce him to take to long-stapled cotton, especially if other methods of cultivation are required. He would only do so if the yield per acre were so much higher as to at least make up for the difference in price between the two kinds of seed cotton.

5387. *Advisability of trials of Cambodia cotton.*—Apart from the question of water, the ordinary cotton soil of this district is probably not very suitable for the cultivation of Cambodia cotton. On the other hand, it would be interesting to know whether part of the land now under paddy would do for this long-stapled kind. It would be worth while to make a trial, the more so as a start has already been made in the Northern tract, Nandyal circle, where weather conditions and soil are probably not so very different from the conditions on this side of the *ghats*. As far as I know, the quality of this Nandyal-Cambodia is not bad and it fetches a nice premium over country cotton.

VI.—IRRIGATION.

5388. *General.*—I have no experience in this line. But I should think that the Kistna river and the canals in this district could be made useful, should American cotton be introduced in this district.

Mr. JEAN RUTZ called and examined.

5389. (*Mr. Roberts.*) The figure 70,000 in paragraph 5364 of my written evidence is wrong. It should be 63,000, excluding Rajahmundry cotton. The shipments of Coconadas to Liverpool used to be 2,000 to 3,000 bales on the average. There were three firms who used to take it. What went to London was probably intended for transhipment to Holland and Belgium. Coconada cotton is used in Italy for *khaki* cloth. I was trained in the central office of our firm at Winterthur, fifteen miles from Zurich. My experience of buying Northerns was gained at Guntakal where I was for five weeks. I mean to say that whatever I knew about buying of Northerns before I came to Guntur, I chiefly learned during my five weeks' stay at Guntakal. I do not know the present difference of price of Coconadas and Northerns exactly but the difference per *khandi* of 500 lbs. is about Rs. 25 in favour of Northerns. The length of the staple of Coconadas is three-fourths to seven-eighths inch. Northerns are only a very little better in staple which is only about seven-eighths inch. It is more regular in staple.

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SIR CLEMENT SIMPSON.

5390. I do not think that the system of forward buying has great influence on quality, at least as far as the Coconada markets are concerned. Our firm has bought most of the forward cotton this year. We never had so much forward business with different delivery times here before. I know that Mr. Gill thinks that the quality will be adulterated because the rates have gone so high but after all we are protected by our contracts which have been made for fair average quality of the season. When the stuff is too bad, it is not accepted. We do not know what the quality is till the people begin to deliver. I do not think that the quality varies very much. Marked differences can, however, be observed between arrivals from different tracts and villages. A good deal depends on the way the ginner works. We can insist on the quality of the arrivals. We pay the same price for fine quality as we do for less good quality because we make contracts for good average quality. We do not pay any premium for good quality. This is not quite correct in as much as cotton arriving from the border of the adjoining Northern tracts as a rule realizes a premium of several rupees. If the deliveries are of cotton which comes within the limit of fair quality, we cannot reject it. I have never been able to allowance cotton of bad quality but, if it is very bad, I reject it. That very seldom happens. The dealers also have a hold on the buyers. They can take their revenge if one is too strict against them. In this matter much depends on the attitude of other buyers who may at times be very lenient regarding quality. In forward buying, if a portion of the crop—say one fifth—were of distinctly better quality, we could not pay any more for it as things are now as we cannot reduce the price of the lower quality. Our sales are based on our purchase rates. We only check when we receive the cotton. I buy for our Bombay firm, at times also for Calcutta and Pondicherry mills. I have no margin from which I can pay extra for good quality. I have only to see that they get as good stuff as possible. All our business is forward business even during the season; we do not, as a rule, see the cotton that we buy. It very seldom happens that we can look at the cotton and then buy it, because the local dealers in most cases first make their sale contracts and afterwards only get the cotton from the interior.

5391. I have some experience of Barar. There we buy practically all our cotton ready. At Nagpur, there is an auction system and the cotton is paid for according to its merit. In Khamgaon, there is no auction system but one looks at every sort that arrives and takes lots from different dealers. One is in the market every day for two months or more. In an open market, it is possible to pay for better quality. I think that the Nagpur system is the best for the ryot as each separate lot is looked at in the auction, but I doubt whether it would suit a big market. The man who brings in good cotton makes much more than the man who has only bad cotton. The Nagpur market is a smaller one than that at Khamgaon.

5392. We pay less for hand ginned cotton than for machine ginned as it is supposed to contain more leaf, seed, etc., and to give about four or five per cent. more loss in the blow room than machine ginned. I have heard from Indian mills that the staple of hand ginned cotton is very irregular. We are now trying to introduce cotton openers in this tract, i.e., we are making investigations to this effect. I think that it will be better to introduce cotton openers than *Japas* openers but the best thing would be to have both. By using openers, the staple might perhaps suffer. There are no openers here and the present system of cleaning by cots is not adequate.

5393. Cotton cannot be picked in dry weather with the same intensity as in damp weather. In the monsoon season, we can press to the smallest measurement. One can tell the weather by the number of hoops that burst.

5394. (Mr. Roddy-Johnson.) I have said that Lancashire has taken only three thousand bales a year of Coconada cotton. That is a very small quantity but it may be said all the same that Coconada cotton belongs to the few Indian kinds which have to a certain extent found favour in the eyes of Lancashire, even though that applies to Coconada in small measure only. I only heard that recently. The sentence in my written evidence that "Up to now Lancashire has taken no interest in this cotton" is therefore not quite correct.

5395. Coconadas cotton would be cleaner if improved methods of picking were adopted and there were supervision of the ginning factories. I think it is a disadvantage that all the ginning factories which deal with this cotton are Indian owned. They are mostly in a very bad state, I think a good deal is done in the ginning factories which ought not to be done, for instance, seed and inferior cotton are mixed with good cotton. The seller tries to lose as little as possible in weight. What falls below the cot belongs to the dealer who takes it away. It is a mystery to me where all the stuff that falls through the cot goes. It is partly fluff and dirt but contains also good cotton, *Japas* and cotton seed. I think that, after cleaning, it is mixed in a fresh lot of *Japas*. A system of licensing ginneries would improve matters. I would be in favour of such a system as it would give a guarantee that a man would risk something if he did not deal fairly.

5396. I do not think that any damping is now being done. Last December, I sent off a lot of cotton to Bombay and there was tremendous loss in weight. So I came to the conclusion that damping must have been done somewhere in the case of that particular lot. I had no complaints from Bombay as regards dampness but there were continuous complaints for three months as regards weight, a thing which had never happened before.

5397. The usual form of adulteration is of *Japas* with ginned cotton and that occurs principally in the case of hand ginned cotton which comes from the Palnad Taluk. This cotton passes through two or three men; the ryot sells to the merchant in the village who sells to the dealer in the town and then it comes to the buyers. I have not seen any other form of adulteration, e.g., adulteration with stones or sand here.

5398. I think it would be worth while to make a trial of Cambodia on paddy land. One of our former agents tried to grow Cambodia here on the ordinary soil but it was not at all a success. The red soil is rather too rocky for it.

SIR CLEMENT SIMPSON, of Messrs. Binny & Co., Ltd., Madras.

EXAMINED AT MADRAS, MARCH 4TH, 1919.

Written statement.

5399. *Desirabilities of improving length of staple of cotton.*—In response to the invitation to give evidence, I regret that I can answer only a few of the questions as put, but I gather that the object of the Committee in asking Indian manufacturers to give evidence is, to ascertain whether they are of the opinion that it is to the economic interest of India and of the manufacturer, that an effort should be made to improve the length

Madras.]

Sir CLEMENT SIMPSON:

[Continued.]

of staple grown in this country. To this I have no hesitation in replying in the affirmative, and I welcome the opportunity to representing to you the manufacturer's side of the question which appears at present to receive scanty consideration. Directors of Agriculture appear to consider the question of output per acre as paramount and if this policy becomes general, manufacturing interests will suffer very serious injury and the progress made by Indian cotton mills will be set back by thirty to forty years.

5400. *Desirabilities of greater co-operation between the Agricultural Department and the trade.*—To judge by the notices we read in the Press, which I can only conclude are demi-official communiqués, an onlooker would think that all concerned had good reason to be pleased. This is certainly not the case from the cotton manufacturer's standpoint, and I trust that one result of your Committee will be a recommendation for a little more representation of the manufacturer in the councils of Agricultural Directors. The principle of Trusts, Committees and Councils is recognised in the representation of shipping interests at every important port and why the same principles are not spontaneously extended to other branches of commerce such as agriculture and industry is not apparent.

(2) An official may be thoroughly trained and qualified to take charge of the Agricultural Department of the Department of Industries on their technical and executive sides, but may still be unequipped on the commercial and industrial sides.

(3) Some Directors no doubt seek commercial information, and all credit to them, from various sources, but others do not. To ensure some sort of co-ordination of purpose and effort I put forward the suggestion:—

1. In order that the following commercial interests may be adequately represented on such a committee by:—

(a) The Cultivator.

(b) The Indian Manufacturer.

(c) The Exporter.

2. To secure some continuity of policy as Directors constantly change.

5401. *Identity of interest of manufacturer and cultivator in production of long staple cotton.*—There may be some conflict of opinion as to whether the interest of the ryot is the same as that of the manufacturer, but in the long run I cannot think that the difference will be distinguishable. The cloths required by the Indian people can be far better produced from American than from Indian cotton. The nearer the Indian ryot can get to American in the quality of the cotton grown, the nearer will the Indian manufacturer get to the quality of cloth required by the Indian people.

(2) The only real advantage the Indian manufacturer has over the Lancashire and American manufacturer (leaving out all questions of duties and excise) is the geographical one, a perfectly fair advantage, but this natural advantage disappears if the Indian manufacturer has to import cotton from America to meet the demands of the Indian consumer, or has to manufacture short staple cottons into cloths unsuited for India and export them to distant markets.

(3) It follows that the Indian ryot will share the geographical advantage if he can produce a cotton suited to the clothing needs of India. That he will get a better price for his cotton from the Indian manufacturer than he would if his cotton has to be exported to foreign markets in the raw or in the manufactured state to countries possibly protected by hostile tariffs.

5402. *Improvement of indigenous in preference to introduction of exotic varieties.*—We have excellent staples that have stood the test of time. With improved seed, cultivation and marketing, I believe that these staples could be further improved and that it is preferable to so improve them rather than to introduce exotic long stapled varieties. It is almost impossible to keep the exotic staples to themselves, the result of mixing the long and the short is to reduce the value of the long to that of the short. The risk of deterioration of exotic cotton is great. I therefore advocate the policy of working up the sun and drought hardened varieties that have survived in preference to running the many risks of importing varieties that may take years to acclimatise properly, that when acclimatised will require constant nursing and in spite of all will, in all probability, decline in staple value. If exotic varieties could be segregated in isolated plains, it might be different, but in this Presidency this is not possible.

(2) As to how an improvement in the Indian staples can be effected is a question more for the agriculturist than for the manufacturer, but from what I have read and seen of the various experiments with improved seed, I have come to the conclusion that the soundest line is to accept the indigenous growth as the best for the District and aim steadily at improvement of the staple. This may be a slow and laborious method, but it will ensure the least dislocation to the ryot and the buyer as represented by the Indian manufacturer.

5403. *Colour and outturn versus length of staple.*—To turn to local conditions, your attention has been drawn to certain correspondence with the Director of Agriculture (Annexure) on the question of Northern and Western cottons, in my opinion, very important varieties. The conclusion I have come to is that the Director of Agriculture and his staff attach to much importance too colour and output. As a manufacturer, I consider colour is of secondary importance to length and strength of staple. Apart from other considerations, there is a very large demand for dyed and bleached cloth all over the world, for which cotton of poor colour but good staple can be used. The Agricultural Department is lukewarm in opposition to the introduction of good coloured short stapled cottons considering that output per acre is of more importance than length and strength. This, in the long run, is a shallow short-sighted policy. The Department, while complacently satisfied with the work done south of Madras, would, it appears, be well content to see the rest of the Presidency produce a white short stapled heavy producing variety.

(2) My opinion is that every effort should be made by the Agricultural Department in all cotton producing districts to increase the length of staple by selection and improvement of the indigenous staples, and the staff increased, so that such effort may be concurrent all over the Presidency and if possible all over India. The surest way of increasing the value of the Indian crop and adding to the reputation of India as a cotton producing country, is to improve the length of the staple and the cleanliness of the marketing all over the country. The addition of a quarter of an inch to the short stapled varieties of Bengal and Northern India would do more to improve the name of Indian cotton in the markets of the world than the addition of the same length to the Broach or Cambodia crop. An improved reputation and value cannot be effectively built up by improving the staple in one district and letting it down in another as some Directors of Agriculture would appear to think.

(3) The Department pleads that it cannot control the ryot's planting. No manufacturer suggests that the Agricultural Department should coerce or interfere with the ryot's crops, but they do expect the

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Sir CLEMENT SIMPSON.

[Continued.]

It is the introduction of these qualities into the district that we deprecate instead of the improvement of the staple of the ordinary Northerns which we consider one of the best cottons grown in India, certainly the best procurable here.

MILL REPORTS.

So-called "Government" White Northerns.

Jamalamadugu Press.—This sample is rather weak when compared with good White Northerns and also contains a good percentage of short fibres, it is much cleaner and loss would be about twelve per cent. We do not advise its use in any of our mixings.

Grown at Government farm "No. 2 White Northerns."

Jamalamadugu Press.—This sample has a good white colour, the staple is uneven and weak. It is clean being free from seed, leaf and there is very little sand. Loss about ten per cent. There is no comparison with good White Northerns and we should certainly not advise its use in our twist mixings.

Madras, the 17th May 1917.

(iv) *Demi-official letter from G. A. D. Stuart, Esq., I.C.S., Director of Agriculture, to Sir Clement Simpson, Manager, Messrs. Binny and Company, Limited, No. 241-D, dated Madras, the 5th June 1917.*

I enclose for your information two reports about "Akola" cotton in Bellary. Akola is the site of a Government farm in the Central Provinces from which Clouston's *roseum* cotton is being spread. I believe that this is identical with *pulichai*, but I am getting a sample direct from the Central Provinces to make certain. The rainfall last year was exceptional, but if this cotton is going to yield anything like 200 lbs. of lint per acre in average years, then I do not see how we can prevent it knocking out Northerns and Westerns altogether. *Roseum* appears to command a fair price in the Central Provinces in spite of its short staple.

Extract from the weekly report of Agricultural Demonstrator, M. R. Ry. S. Ramaswami Pillai, Bellary, for the week ending.

(1) 29th April 1917—

Saw Sub-agent of Messrs. Volkart & Co. at Adoni and learned from him that *pulichai* cotton, known locally by the name of Akola cotton and grown as a *mungari* crop in red and intermediate soils, was mixed by merchants with the Western cottons grown in the *hingari* season. There is a large demand for Akola cotton seed at Adoni. M. R. Ry. Sivraj Singh of Adoni enquired me if I could supply 500 maunds (13,000 lbs.) of this seed. I informed him that it was not sold by the department. He and other ryots intend to fetch the same seed from Akola direct.

(2) 6th May 1917—

30th April 1917.—Journey from Adoni to Kotegal village and back to Adoni and thence to Hagari by the mail train. Inspected at Kotegal *pulichia* cotton known locally by the name of Akola cotton. This cotton is sown as soon as the south-west monsoon commences, i.e., in the same season as *mungari jonna* and is confined now to red and intermediate soils. Picking of *kapas* commences in October-November and in a normal season ends in January-February. But the cotton sown in the last season continues to yield even now owing to November and February rains. The summer pickings have given more yield than the season pickings. The owner of a eleven acres field located near the village estimates the season picking at 120 maunds and the summer picking at 150 maunds of *kapas*.

(v) *Demi-official letter from Sir Clement Simpson, Messrs. Binny and Company, Limited, to G. A. D. Stuart, Esq., I.C.S., Director of Agriculture, Madras, dated Madras, the 12th June 1917.*

I have to acknowledge your demi-official 241-D, dated the 5th June.

The question of the most suitable cotton to grow may be approached from several sides and your department has a good deal to consider, but chiefly no doubt the interest of the grower.

The interest of the manufacturer is what concerns us. The manufacturer utilizes, to weave a reasonably good cloth, two classes of cotton—

1st.—A strong fairly long staple cotton for his warp or twist which has to bear the friction of manufacture and on the quality of this cotton the quality of his output depends.

2nd.—A cotton for weft. Here there is comparatively little friction, and strength from the manufacturer's ordinary standpoint is of very little importance, consequently he considers colour rather than strength.

Most of the cotton grown in India is only suitable for weft, and in the countries to which it is exported, is probably used with American cotton wrap.

We have used or tried nearly every well-known staple of cotton grown in India for warp, and we may say that the very best cottons for this purpose, from our experience as Indian cloth manufacturers, which extends over 35 years, are Northerns and Westerns. These two staples have been our stand by through all these years.

Akola is not a good warp cotton, we know it well.

What I want you to consider is that if India is ever to become self-supporting in the way of cotton, a reasonable quantity of warp cotton must be grown somewhere, and we venture to suggest that it is very important that your department should devote considerable attention to reconciling the grower's side of the question with the manufacturers by endeavouring to increase the output per acre of the Northerns* and Westerns staple before deciding to encourage the weaker growths, which may give a larger output of whiter cotton per acre.

For a few years the grower may do better, but if the same policy is followed throughout India the day will come when India will have to import its warp cotton and the bulk of the weft cottons will become a drug on the market.

Signs of this are not wanting already in Devangeri and elsewhere.

* N.B.—These staples are grown north of the City of Madras.

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[Continued.]

If power looms are to be worked in India at the speed and efficiency of the looms at home, we must grow warp cotton at least as good as Westerns and Northerns, and if Indian war requirements are to be met by India which is the avowed policy of the Government, these qualities want improving by every means at your disposal.

That even the hand loom weavers prefer a yarn spun from warp cotton we know from our experience with our surplus yarn production. Our surplus warp yarn always commands a higher price than our surplus weft, though inferior in colour.

We may perhaps also mention that you will see at Madras and at Bangalore the only automatic self-shuttling looms in India, and the use of these looms is absolutely impossible without a very high standard of warp.

(vi). Letter from G. A. D. Stuart, Esq., I.C.S., Director of Agriculture, Madras, to Messrs. Binny and Company, Limited, Madras, R. O. C. No. 477-488-P., dated Madras, the 2nd July 1917.

With reference to your letters, dated 11th and 17th May last, forwarding samples of cotton and seed from Nandyal, I have the honour to inform you that I have enquired into the matter and find that the admittedly poor quality of our No. 2 cotton this year is due to the abnormal season. The rainfall was over seventy inches as against an average of thirty inches.

2. I will first deal with your remarks as to the relative importance of colour and staple. On this point the Deputy Director of Agriculture Mr. Hilson, writes as follows :—

As regards this firm's reference to the relative importance of colour and staple, might I once more state the case in regard to the improvement of northerns.

There are two grades (1) White Northerns and (2) Red Northerns. Both of these cottons are a mixture of two species *Gossypium herbaceum* and *Gossypium indicum*. The general characters of these two species are as follows :—

	<i>Herbaceum.</i>	<i>Indicum.</i>
Yield of <i>kapas</i>	Low to high.	Fairly good.
Ginning outturn	Do.	Low.
Colour of lint	White to creamy	Creamy to red.
Strength of lint	Weak to fairly strong.	Strong.
Length of lint	Short to fairly long.	Fairly long.
Feel	Harsh to soft.	Soft.

Now *herbaceum* preponderates in White Northerns (white is here a relative term) and *indicum* in Red Northerns. It therefore follows that White Northerns is really poorer cotton than red. Yet Red Northerns sells at a rate from Rs. 5 to Rs. 10 less than white.

It is obvious then that the Nandyal market favours colour rather than staple. It is also obvious that in the *herbaceum* plants lay the best chance of improving fairly quickly the ryots' returns from this crop. Until we can produce an *indicum* which is no poorer in quality of staple than Red Northerns, but has a high ginning outturn, good staple is going to mean loss to the ryots unless it is paid for on quality. Are the buying firms, or is any buying firm prepared to do this ?

3. For these reasons we have selected a *herbaceum* cotton No. 2 for distribution to ryots. Now this cotton is more susceptible to heavy rainfall than *indicum*. Consequently, this year, our No. 2 which is pure *herbaceum* was poorer than ordinary White Northerns which is a mixture of *herbaceum* and *indicum*. In ordinary years our No. 2 is better than ordinary White Northerns as you yourselves have frequently reported.

4. The sample of "Nandyal Americans" sent by you is not Cambodia but mainly Dharwar American mixed with some Cambodia and some Northerns. We have had nothing to do with introducing Dharwar Americans.

5. In this connexion, I would invite your attention to my letter R. O. C. No. 4771-G-1, dated the 2nd December 1916, enclosing a copy of a report by Mr. Hilson on our three selections Nos. 2, 14 and 50. You will see from this that No. 50 which gives the best yield but the worst staple is a *herbaceum* cotton, while No. 14 which gives a lower yield but a good staple is an *indicum*. I am awaiting a spinning report on No. 14 this year before deciding whether to put it out. But I am convinced that we shall not be successful in getting ryots to grow it, unless the buyers will pay a premium for its staple to compensate for its low ginning percentage.

(vii). Letter from Sir Clement Simpson, Messrs. Binny and Company, to the Director of Agriculture, Madras, dated Madras, the 4th July 1917.

We have the honour to thank you for your No. R. O. C. No. 477-488-P. of the 2nd instant which we regret we do not find very reassuring.

We consider Red Northerns cotton the best spinning cotton in India, next to it comes White Northerns which no doubt is the mixture you describe.

If the colour of these cottons were better and the marketing cleaner, they would command a higher price than Broach.

There is a market for all kinds of cotton, no doubt cotton of any colour or staple would find a market at Nandyal or elsewhere, but this is not a sound reason for debasing one of the finest cottons grown in India for a fugitive advantage to the grower.

The statement that Nandyal market favours colour rather than staple is a superficial truism. Other things being about equal, white cotton is naturally given preference, but the colour of Egyptians did not prevent their establishing a good market for themselves, but it was their staple that did it. White Northerns certainly sells at a higher price than red, but Red Northerns on account of its staple sells at a very much higher price than Cocos of like colour.

If the Agricultural Department is deliberately going to sacrifice staple for colour all over India, they will do irreparable damage to Indian cotton and rapidly increase the relative distance in price between Indians and Americans which it should be its aim to equalize.

To meet the requirements of the army during this war, we have found it impossible with our Indian cottons to give the strength per square inch that the army authorities have been used to in their supplies from

4. Both Red Northern and White Northern are a mixture of the two species *Gossipium indicum* and *Gossipium herbaceum*. *Indicum* is red and strong, *herbaceum* is white and weaker, but still fairly strong. Red Northern contains more *indicum* than white does. As the trade have always favoured whiteness we made our first selections from *herbaceum*. The best of these is our No. 2 which we have been putting out on a large scale in recent years. It is particularly white. Buyers give no premium for extra whiteness or cleanliness. If the cotton is up to the standard of White Northern, it gets the market price. If it is below this standard, it is allowed, but if it is above the standard, it gets no extra premium. Consequently a ryot or dealer who has any of our No. 2 does not sell it as such, but mixes it with Red Northern so as to bring the colour up to the White Northern standard. The result is that there is less Red Northern brought in. If you want strength, your remedy is to pay the same price for Red Northern as for white, or even pay a better price for red (but in this case there would be danger of Coconadas being brought in to mix with the white). Whether you want strength so much that it would pay you to do this is a matter for you to decide. But so long as you give a premium for whiteness, you will get a weaker cotton on the average.

5. Our selection No. 14 is an Indian cotton, but a white variety. We are growing thirty acres of it this year and will multiply it as rapidly as possible (say fifteen fold per annum) and put it out in place of our No. 2. Its one defect is a low ginning outturn, 25 per cent, as compared with thirty per cent. for No. 2. For this reason ryots may be a little shy of growing it, but they will do so if buyers will give a small premium of Rs. 3

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[Continued.]

or Rs. 4 a *Mardi* for it as an encouragement. Owing to its strength, it should be worth more to spinners than ordinary White Northern. If it is to be multiplied rapidly, it is essential that the crop should be separately ginned and the seed returned unmixed to the growers. We can do this for the first two years, but in the third year, when the crop should be over 1,000 bales we want to help the buyers. In the south the buyers have helped the spread of *karunguni* very largely by arranging to gin specially all consignments of *kaps* brought in by ryots with a certificate of purity from us. If you owned or leased a ginnery at Nandyal, you could do this. You would be certain that you were getting a pure crop and, by returning the pure seed to the ryots, you would ensure the increase of the crop each year. Failing some such action the strain will get mixed at the ginneries and its progress will be slow.

I am asking the Bombay Company to help us in this way at Proddatur, Kurnool and possibly Adoni, but I will put out the strain round Nandyal first.

6. With regard to the intrusion of *pudichai* or *roseum* cotton into the Northern and Western areas, we were wrong in supposing that this had been introduced by the Madras Agricultural Department or that I intended to introduce it in the near future. There is nothing in my memo-official No. 244-D, dated 14th June 1917, to lead you to suppose this. But the point is that certain ryots round Adoni have discovered that *roseum* cotton gives a large outturn on red soils as an early (*mungeri*) crop. They know that this is the seed from Akola where the Central Provinces Department of Agriculture have a cotton farm. The reports of the Central Provinces Department of Agriculture on this cotton are to be found in the Agricultural Journal of India, Special Indian Science Congress Number, 1917. I can no more prevent ryots, reporting that they are growing this cotton than I can prevent them growing indigo or groundnut in preference to cotton. It is not more profitable to do so. In the south we have been able to knock out a number of cotton farms.

- (1) the buying firms control the ginneries and so can if they wish test and purchase only the best, returning the seed, and
- (2) our *karunguni* selection Company No. 3 gives a better return on *kaps* than any other company in the district.

[Matters.]

[Mr. GUNNING SPEAKING.]

[Continued.]

of Europe with lint. We reject a good deal of mixed stuff that is mixed. Our buyers are not Europeans. We pay them Rs. 250 a month and free quarters. They have had to make in cotton work under us and they have been with us one year. All the cotton they buy for us is examined and reported on at the mill and is compared with other purchases, for instance those from the Burdoy Company.

5419. The policy I could advise would be to concentrate on the well known old types, Northern & Western & long, as well as on Cambedia, and by selection and improved cultivation to get them back to the old type level. The best thing is to do the best with what you have got. I do not think that it is quite what the Agricultural Department have been doing. No. 2 is improved White Northern. It is a selection from White Northern but it is a selection for cotton, and not for improved staple. The Agricultural Department say that No. 2 is good staple, giving per centage and colour and that it is the best that they have to give. But I think that it is worse than the old variety cotton. Number 4 is a selection from White Northern, and it is too weak. Its defect is that it has been put in the present year. I contend that the Agricultural Department are not on staple but colour. The attitude of the Agricultural Department has been that the better the harvest is the better the cotton with a good cotton rather than to develop the quality of the staple of what they have got. That is the whole position of the correspondence that I have from the Department.

5420. (Mr. BAKER.) We buy very little cotton in Bombay. The only good cotton that we get from Bombay is the *Dhara*. We like *Dhara* better than *Pras* but not so much. We get very poor results with *Pras*. The cotton that is from the Burdoy Press, but that we are getting the cotton from Burdoy in the Punjab District of India. The cotton that comes here from Goda and Peshawar we call *Longton*. It is very good, it is a selection from a fine *Dhara* in Mysore and from a *Hull*. We are *Hull* for *Pras* and *Pras*. As a matter of fact we are doing up to get a good *Pras* but then it is very heavy and there is too much lint. There has been a great deterioration in *Longton* as well as in Western in general to the detriment of the cotton. We are very little about it or about doing it. We do not buy any more good *Dhara*. I don't think we have bought any better cotton, so-called, but I am not familiar with those Bombay cottons.

5421. The whole point that I am raising is that all over India, especially in the *Pras* variety, cotton is deteriorating in quality and in staple. I think this is due to a few types being grown in the districts from which the cotton is sent. I don't see how this can be stopped except by centralisation and each country as the Agricultural Department is prepared to give. If the Agricultural Department cannot prevent the cotton from being mixed, I am afraid I have no remedy to suggest except centralisation on the part of the buyers. I do not suggest any local remedy. At present there is a great shortage of cotton, both short and long staple. Anything that can be put will be purchased and the buyers are not likely to care the quality that they have and to control in the present circumstances. I would suggest that the Agricultural Department should, where possible, put out pure types of seed and encourage the cultivators to grow them and that the Department should extend the distribution of seed by personal and by multiplication of seed farms. I think everything should be done in that direction possible. I would not preclude a man buying and seed he wanted. If the Agricultural Department gave out improved types of seed at a reasonable rate, it would help matters. I think they ought to do that. I do not like mixed seed. The Agricultural Department will want a great deal of good seed to be made available for all growers and I should be prepared to come and a large increase of staff right through. It should be the policy to benefit the cultivators in the greatest measure and hence the policy of pure long staple, that gives a better spinning percentage and better yield is wrong in the cotton ray, for the present, pay the cultivator but eventually it will not. I do not know how to explain matters more clearly than by saying that the production of the best is always the best policy. I do not think that there should be legislation against the cultivator. What I propose is that the Agricultural Department should evolve some type of cotton by seed selection which will pay the cultivator just as well as the short staple and will at the same time be more useful to the manufacturer.

5422. I think that buyers do pay a very considerable premium for long staple cotton. Take for instance the difference between Guntur cotton and Cambedia. It is now Rs. 50 per *Maad* of 500 lb. of lint. The price of *maad* should be Rs. 120 less than that of Cambedia but I do not know what it actually is. We do not buy short staple cotton. If short staple cotton is mixed with a better staple cotton, it obviously fetches a higher price. The intrinsic value of *maad* to me as a buyer is on present value at least four annas per pound less than that of our good indigenous cottons.

5423. I cannot think of any practical suggestions to stop mixing. I would not suggest the prohibition of the transport of cotton except to a mill or to a port such as Bombay and Madras. I think that the grower and the ginters have as much right to mix the cotton as the mill owner and as much right to water it. You have no right to legislate against one man and not against another. Legislate right away through if you like but I do not think it is right to legislate against the ryot and the broker to protect the merchants who are quite capable of taking care of themselves. You must legislate all the way along. You cannot legislate against the ryot and leave the manufacturer free when he also mixes short staple cotton with long staple cotton deliberately. I am not in favour of legislation against one class: I can only suggest that Government should help in the distribution of seed and try to find out strains of cotton that will pay the ryot and give better results. It is only during the last few years that all this trouble has come about, apparently through the Agricultural Department trying to help the short staple cottons. I cannot think of any scheme—even legislation—by which it could be stopped. I do not know that mixing is the cause of the deterioration of the quality of cotton right through India. One must get to the root cause of the matter before suggesting that. I do not think that any prohibition should be enforced in regards to the transport of cotton. That would affect the freedom of trade. The manufacturers also impose on other people.

5424. We have been buying Northern cotton long before I came to India—certainly ever since—and the type remained constant right up till the last few years. It is only during the last few years that the Agricultural Department has opened a farm at Nandyal and has made experiments with other varieties and has, I suppose, drawn the attention of the ryot to the bigger outturn of certain strains. The fair inference is that, as a result, the ryots are now casting about for cottons with bigger outturns and I think they are finding them. To my knowledge, the Agricultural Department has not given out the seed of any short staple cotton. I think it obviously ought to be the policy to cater for a large and increasing local market in preference to an export market. The long staple cotton must certainly go up in time. The trade has got to bring about a difference in price between long and short staple cotton.

Madras.]

COMMITTEE OF EUROPEAN OFFICERS BUCKINGHAM AND CARNATIC MILLS, MADRAS.

"actual" for many months in the year whatever happens, or cotton for their needs would pass out of India through the export houses. The cottons we want can be easily cornered and the future cover rendered useless. I cannot see that a future market would restrict forward contracts. There are so many different types of cotton and distances and charges are so great, that it would be most expensive if the "actual" had to be selected in Bombay. To make myself quite clear, I would cite a mill situated at a distance from Bombay and from the sea board say at Coimbatore or Madura. Such a mill might cover forward sales by buying future in Bombay. Mills at Coimbatore and Madura look primarily for supplies to cottons grown at their doors, if they neglect to buy such supplies forward relying on a future fixture, there is nothing to prevent the export houses, their competitors, buying the "actual". In these circumstances, the mill at Coimbatore or Madura would have to seek the "actual" in Bombay. For such, their future cover might be of very little use as the mtings would be all upset as also the standards of yarn or cloth.

(2) The establishment of a future market in Bombay is calculated to increase further the manipulative operations of the foreign exporters and increase their influence on the cotton markets of India.

(3) Certain exporters in their evidence before you, deplored forward contracts whilst they are themselves the most consistent offenders, not only in making forward contracts and corners, but in making demoralising cash advances. A system of monthly settlement of differences on contracts might be useful, but a very little combination on the part of buyers or Chambers of Commerce would bring this about, a Central Cotton Bureau at Bombay is scarcely required for the purpose.

5438 *Effect of inferior cotton on labour supply*—If I may offer one more remark, I would like to say that I agree with the very valuable evidence given by Mr Halliwell, as I read it, viz, that much of the labour trouble and discontent in Indian factories is due to the inferior cotton supplied and to the labour being called on to perform the impossible task of making inferior cotton spin superior counts.

(2) I have been connected with cotton manufacture in India for over thirty years and my experience is that every attempt to cheapen costs by lowering the class of cotton used for a particular purpose has had disastrous effects on the supply of labour, the output of the mill and the contentment of the workpeople.

5439. *The question of legislation*—If recommendations for legislation should be contemplated by the Committee, I would once more urge that they should be thoroughly thought and through, not directed against the ryot alone, but equally against the manufacturer who forces on his work people a cotton below the standard for which it is suitable, who waters his yarn, puts clay in his size and Epsom salts in his cloth. The ryot deceives no competent manufacturer or buyer while the manufacturer may impose inferior wares on a untrained and innocent public.

(2) The only legislation I consider desirable is that the name of the press should be distinctly marked on each bale with the press serial number and a register kept of the name of the person for whom each bale is pressed, this solely to assist in the tracing of deliberate fraud.

COMMITTEE OF EUROPEAN OFFICERS OF THE BUCKINGHAM AND CARNATIC MILLS, Madras.

EXAMINED AT MADRAS, MARCH 4TH, 1918.

Written statement.

IV.—MANUFACTURE.

(a) Ginning and pressing

5440 (38) *Saw gins versus roller gins*.—The chief merit of the saw gin is that of a large production as a sixty saw gin will produce in ten hours 5,000 lbs of lint. This large production results in a low ginning cost.

(2) The merits of the roller gin are.—

(1) Easier ginning, i.e., less damage to the staple.

(2) The roller gin does not lend itself to high speeds as does the saw gin.

(3) There may be more carelessness in looking after the roller gin yet the same damage will not be done to the fibre, as would be in the case of the saw gin. A double roller gin will produce about 1,200 lbs per day. Thus the cost of ginning by this type of gin is somewhat higher.

5441. (39) *Effect of saw gins on Indian cotton*.—We could not say if saw gins have been successful with Indian cottons generally, as we have only seen one at work in our mills and that was condemned for damaging the staple although no spinning tests were taken of the fibre after ginning. The general opinion even by American experts seems to be that a certain amount of damage results from using the saw gin. The tendency seems to be to run these gins at too high a speed so as to reduce the ginning charges. Certainly the action of a saw gin is much more brutal than the roller gin during the operation of detaching the fibres. If the saw gin is not very carefully adjusted and attended to in the setting, much nep is made and the fibre can also be bruised or damaged, thus weakening the resultant yarn. We would not under any circumstances advocate the use of the saw gin in this country as the labour is not to be relied upon.

(2) We advocate a full time practical man being engaged to visit ginning factories and advise adjustments, repairs, speeds and general efficiency of machines to attain the best results at the cost of the Agricultural or Industrial Department.

5442 (42) *Effect on machinery of replacement of short staple cotton by long staple*.—This all depends on the definition of long and short. We should have to make some considerable changes if we jumped from coarse as at present to real fine spinning, but not for 30s from indigenous long stapled cotton. The proportion of our machinery for real fine spinning (over 40s) would be all wrong. We should have too much of one and too little of another. Then, on most machines set out for fine spinning, some details in each machine certainly exist which are very different to what we find on coarse machinery although in the main the features are similar. We could spin finer certainly on existing machines than we do, possibly as fine as we shall ever want to go in this country, but we are not set out for any great changes and would not suggest them.

(2) We would, however, point out that the proportions of the machinery will vary to a certain extent below 10s. Take a mill, similar to our own, set out to spin average 16s, if we get down to average 10s we should

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got some spinning spindles stopped for rovings. So, in the question referred to, if we had to change from average 16s to average 30s, we should keep all spinning spindles at work, but a certain proportion of opening and preparing machinery would stand idle owing to the lessened requirements of the spinning and owing to using a better cotton which the higher counts demand.

5443. *The general question of long versus short staple cotton.*—As regards long and short staples, this is a question which can be argued from different standpoints, but to our mind the real point is—"Do we require the long exotic staple?" Taking the trade as a whole in this country, we should say that fully 95 per cent. of the power looms are engaged in making cloth and using a range of counts from 11s to 40s in warp and weft and we further think that our present cottons are quite good enough for this purpose and the machinery has been set out to spin this range of counts. Moreover the people of the country with small exceptions require as cheap a cloth as is possible to produce, as wages are comparatively low. Then if we want to cater for the needs of the country we must make a cloth that will command a ready sale. Such a cloth is being made at present and the manufacture is a profitable one, and this is being done from cotton grown at present in the country and we don't see any reason for a change to an imported long stapled variety. We think the constant call for long exotic staple does not come from the Indian manufacturers and we class it from an outside source. We think that there would be much more benefit in trying to improve the existing cotton in quality, giving us a cotton which is cleaner, more regular in staple, stronger and generally more reliable than we get at present. We further think that this is no country for growing real fine stapled cotton, the climatic conditions appear to be against it and the labour is anything but what it should be. A good exotic cotton in this country does not appear to retain its character for any length of time, as we might quote in the case of Cambodia. The trickery in mixing and pure neglect which has taken place since this cotton was introduced have brought this cotton down to a level with the ordinary indigenous cottons. The only new type of cotton we have had to deal with has been Cambodia, and we have used and still use a considerable amount. When first introduced and for several years, this type was very good and we spun a good 30s warp and a 40s weft from it, and we have no hesitation in saying the yarn would compare favourably with any spun from American cotton. We had no difficulty with it in any respect from the bale to the finished cloth and the yarn was favourably commented upon in Manchester. But it began to deteriorate and is still doing so, the length of staple has decreased, also the strength to a certain extent. It still maintains its beautiful colour, but it is difficult to obtain, if at all, any Cambodian equal to the cotton as first introduced. What are the reasons for the deterioration? We should say that the seed selection has not been carried out in a proper manner and this and neglect in cultivation have been the two main factors in its downfall. It is a great pity that it has not maintained its early promise. Such would be the fate of any other long stapled exotic cotton introduced in this country. This is one reason why we are dead against them.

(2) In further answer to this question, we mention that more benefit would be derived if energy was directed to improving the existing indigenous cottons, instead of attempting to grow exotic cotton from imported seed. We append a list of our most useful cottons with tests:—

Name of Cotton.	Blow Room loss.	Test for 19s Twist.
	Per cent.	lbs.
Red Northernns	15-41	820-2
Good Westernns	16-22	76-80
Southern Cambodia, Exotic Cotton	6-80	75-87
Good Northernns	15-00	75-60
Pagalkot (Bijapur District)	18-50	73-25
Devangeri (Mysore)	15-00	67-20
Ginned Coconada	17-27	66-62

To this list may be added *Tinnies, Karunganni, Trichy, Salems*, all of which are useful cottons.

(3) It would be a very serious mistake if the above mentioned cottons were allowed to decrease in cultivation by the substitution of shorter and whiter stapled varieties. In our tests this season, we find evidence of some other shorter stapled, weaker, but better coloured cotton, which has reduced our tests in strength. On enquiry, we find this variety is being planted in preference to our usual cottons, on account of its higher yield per acre. What will become of the mills who have built up their trade and wholly depend on these cottons? There are no other cottons grown in India in any quantity that could be used in their place and give us the same results. If the mills in question have to use this shorter staple, it may mean weaving for a different market altogether as the shorter and weaker varieties cannot be woven into cloth that will give us the necessary strength we require. Even if some could be used, it would mean a big reduction in the speeds of preparing spinning and weaving machinery with the corresponding increase in cost of production and this would mean a higher priced cloth. Then this reduction in speed which would be absolutely necessary would give competitors a chance they would not be slow to avail themselves of. It would also be giving help to Japan and the Continental countries who require this short staple. All this would be to the detriment of the Indian mill-owner who has sunk a large amount of capital in plant specially adapted to use these strong cottons. These indigenous cottons are the cottons we would suggest that Government and the Agricultural Department improve by all the means in their power, and by doing so would benefit the trade of the Indian mills and the country.

(b) *Spinning and weaving.*

5444. (43) *Counts spun and market for yarn or cloth.*—Our range of counts is from 8s to 30s in warp and weft. Our chief markets are India and Burma.

5445. (44) *Condition of cotton.*—So far as the packing of the bales is concerned, we have no complaint to make as they are very good especially when compared with American packing. We have, however, a complaint

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to make and a very serious one regarding the way the cotton is marketed, for there is no doubt adulteration of the cotton is very common. Seedy bales are very common with a great loss to the spinner, too common to be accidental. Another serious matter is the leaf which is present in most cotton to a serious extent and no doubt the bulk of it could be avoided. Once the leaf gets in the cotton, no amount of opening or carding can get rid of it and the finished yarn or cloth is depreciated in value. Sand and mineral matter are also present to a great extent all of which is a great loss to the spinner. As an illustration, we may say that in different cotton we use, we have had a range of loss in blow room varying from 4.5 per cent. to 22.9 per cent, add on to this another six or seven per cent. for the carding and spinning processes and the loss on some cottons becomes appalling. There is no doubt also that cottons are mixed, as quite a lot of variation exist in the length of staple even in the same lot, or even bale, in many instances. There appears to be no standard, or system of grading and the amount of stained and immature fibres present is certainly very great. All these points have their due effect on the spinning as the strength is a constantly varying factor and a difference of from ten to twenty per cent. is often met with in cotton from the same district and from the same press. This season, just to show what difference can be found in the cotton from the same press, we tested two samples and one sample lost over 100 per cent. more in blow room than the other sample.

5446. (45) Effect on cotton market of replacement of short staple cotton by long staple.—The change referred to could only come about in a very gradual manner if at all possible. So the effect on the market will be extended over a long period and not much effect would be felt. The gradual replacing however of short staple by long would eventually compel spinners to buy a better class of cotton, this would cost more, the cost of production would also be more if finer counts were spun, or if not, then producing the same counts from a better cotton the resultant cloth would be higher in price, and unless wages improved in this country then the cloth would be further out of the reach of the native. Possibly he would have to buy the cloth, but he would not buy as much. There will always be required in this country a great quantity of cheap cotton cloths such as are produced as at present and if they are not made in the country, then Japan or some other country will make them. Prior to the war, Germany made a lot of cheap cotton cloths for the Indian market and Japan is now doing the same. We maintain these should be made in the country; there must be money in the trade. The wants of this country are chiefly cheap to medium cotton cloths and these are being made now but not in sufficient quantities for the country's requirement. So why introduce exotic "long staple," if it is not required, when the needs of the country are being supplied by the mills of the country. With a surplus, then would be the time for making a change, but there is work for more mills on the same class of goods as is being made at present. Then again the labour of the country is not favourable (from the standpoint of quality) to making fine yarn and cloths; in the future, this may come about, but introduced at present Lancashire would kill the trade by competition. Indian mills on coarse counts are holding their own, let them stick to it.

Mr. A. ALEXANDER, Spinning Master, Mr. G. A. HARGREAVES, Spinning Master, Mr. J. T. BANTON, Carders, Representatives of a Committee of European Officers of the Buckingham and Carnatic mills, called and examined.

5447. (Mr. Hodgkinson.) Mr. Alexander.—I have had experience of spinning in Oldham, Manchester since I was a boy. We used American cotton there. I have no experience of Indian cotton at home nor has Mr. Hargreaves or Mr. Banton. I do not suppose Lancashire would buy Indian cotton at the present time if it could get any cotton from elsewhere. In Lancashire, they prefer to use the waste from the fine cotton for their coarse counts. There is a certain amount of waste imported from America and that is possibly used for the same purpose. So it amounts to this that the Indian cotton at home is in competition with American waste. If the Indian cotton is to be used at home, it would have to be marketed in a cleaner condition and more care would have to be given to it, otherwise it would not command a regular price. They do not go in for it at home because they cannot rely on it to the extent that they would like.

5448. The cotton shown us from the Government Farm at Nandyal, No. 14, is not a bad cotton. It is pretty strong and it is very clean but is only seven-eighths inch in staple. This cotton would be very useful at home for anything up to 40s. We do not get cotton like that here.

5449. There is a great deal of room for improvement in picking and ginning. In the first place, the gins want attending to very much; they spoil a lot of cotton in different ways. Secondly, attention should be directed towards the prevention of the mixing of seeds in the gins; and thirdly, to keeping the length of staple more regular by preventing the mixing of seeds in other places. Gins are run at a greater speed than they should be, unless there are people competent to deal with them. That is to say some one with really practical knowledge is wanted to advise exactly at what speed the gins should run. It is not possible to lay down hard and fast rules as to the speed of the gin. It all depends on the condition, quality and age of the machine. The ginners are paid by weight irrespective of quality.

5450. To get clean cotton there will, I think, have to be a governing body outside. Certain places must be condemned if they do not keep up their cotton to a certain purity. For that, there would have to be some system of licensing. I would not like to go so far as to boycott such places but I would let them know that their stuff could not command the same prices as that from other places. Some of them put water in their laps and that gives trouble.

5451. We are not in favour of using saw gins for any cotton in this country. I have brought a few samples of Cambodia cotton both saw ginned and roller ginned for purposes of comparison. The Committee will be able to see that the roller ginned is the better of the two. The saw ginned sample is dirtier than the roller ginned. There are mostly notes in the saw ginned and it is very difficult to get them out. The blow room loss, i.e., the loss up to the scatcher for saw ginned cotton is 10.0. That for roller ginned is 7.0. The loss in carding is 7.1 for the saw ginned and 6.4 for the roller ginned. A great amount of short fibre is taken out from the saw ginned cotton by the comb. The loss in the saw ginned cotton comes to 18.5 per cent. as against 14.3 per cent. with the roller ginned. The total loss for saw ginned cotton therefore works out at 26.5 as against 20.3 for roller ginned. The difference is seven per cent. In regard to testing, the saw ginned sample for 18s answers to a test of 92 lbs. whilst the roller ginned answers to a test of 95 lbs. for 18s. We made these tests for the Bombay Company. We are not in favour of saw gins for any cotton.

5452. Mr. Hargreaves.—All the American experts seem to be in favour of roller gins.

5453. (Mr. Wadia).—There is no doubt that the roller gin separates the fibre from the seed better with much less damage to the staple than in the saw gin. There is no difference in the quality of the cotton whether it is ginned in the single roller gin or in the double roller gin; the action is practically the same in both cases.

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5468. *Mr. Hargreaves.*—It will be another fifty years before we can turn out 60s yarn to compete with Lancashire. Out here the labourer is not conscientious; he does not care how much waste he makes. At home it is wholly different; the worker knows that if he loses his job it will be some time before he gets another. But out here it is not so. If a man loses his job, he will go on to the next mill where he is sure of another and as long as that continues, I do not think that the quality of the work will improve to any great extent. In my opinion there is no chance of any direct competition with Lancashire in the finer counts, i.e., in counts over 50s. The machinery would have to be altered for one thing. If we imported American cotton for finer counts or used Egyptian cotton for 60s to 80s twist, we should have to make alterations in the machinery. I have known of cases where they tried to spin 100s out of Egyptian cotton and they had to get special rollers and all sorts of things. A great deal of money was spent but it was of no use.

5469. (*Mr. Roberts.*) We are now buying Cambodia from the same place we started, i.e., Tiruppur. Cambodia has deteriorated in the tract in which it was originally grown. I think that is due to seed selection not being carried out and also to the cotton being allowed to be grown on land which was not suitable for it. It is being grown as a dry crop instead of as a garden crop. It will never be a success as a dry crop. There is no other cotton that it could be mixed with without deterioration except perhaps Tinnevellics. Tinnevellics are the same in colour but we find a difference in the strength and testing characters. We prefer them to Cambodia. We would very much like Cambodia to be improved or kept up to some standard. It is a cotton that we advocate special measures being taken to keep up. There is more variation as regards the length of staple in Cambodia than there used to be.

5470. If you take two cottons, one saw ginned and one roller ginned, you would find that the roller ginned cotton would be better in grade and class than the saw ginned.

5471. *Mr. Banton.*—The saw gin is supposed to take more dirt out of the cotton but we do not find it so. We find more dirt in the saw ginned cotton and on the other hand there is more short fibre and more nap—three or four per cent. more. We used the ordinary saw ginned for our tests. The saw gin was ten inches in diameter and the speed was 400 revolutions per minute. For the roller gin the beater speed was 850 and the roller speed 70.

ANNEXURE.

Report on tests of yarn carried out for the Indian Cotton Committee.

(1) The Carnatic Mill Company, Limited.

N.B.—These yarns are not from combed cotton.

Cotton.		Blow room loss.	Test per lba.
		Per cent.	lbs.
Red Northerns	19*3 Hank roving .	15.7	93
Karunganni		9.2	83
Cambodia		5.8	82
Broach		8.5	57
White Northerns		15.	82
Coconada		14.9	73
Westerns		21.1	81

Turns per inch in above samples 18. All the samples spun under the same conditions.

Cotton.		Blow room loss.	Test per lba.
		Per cent.	lbs.
Red Northerns	40*6 Hank roving .	15.7	37
Karunganni		9.2	35
Cambodia		5.8	31.25
Broach		8.5	19
White Northerns		15.	31
Coconada		14.9	23
Westerns		21.1	31

Turns per inch in above samples 27½. All the samples spun under the same conditions.

Tests carried out on December 8th, 1917.

Note.—The Cambodia is also a selected bale as the average test for this cotton during the season 1917 was about 71 lbs.
Note.—The Red Northerns were from a selected bale being better than the average to show the possibilities of this cotton.

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(II) The Buckingham Mill Company, Limited.

N.B.—The yarn in each case was spun from combed cotton, 10s from 3½ hank roving 40s from 4½ hank roving.

Cotton.	19s average Counts.	Test per len.	40s average Counts.	Test per len.
		lbs.		lbs.
Red Northern	18-05	113	40-07	42
Karunganni	18-08	99	39-02	41
Cambodia	18-81	95	39-05	38
White Northern	19-23	84	39-5	34
Western	18-89	91	40-52	34

Tests carried out on December 5th, 1917.

Mr. W. R. H. WAIT, Assistant, Bombay Co., Madras.

EXAMINED AT MADRAS, MARCH 5TH, 1918.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

5472. (1 and 10) Experience.—I have been stationed in the Bellary District for twelve years, with supervision of agencies in the Anantapur, Kurnool, Cuddapah and Raichur (Hyderabad) Districts and have been in touch with actual cotton cultivators.

5473. (2 and 11) Varieties.—Short stapled cottons have not as a rule been grown in these districts, but recently the *roseum* variety has been introduced. Cotton is grown on two different classes of soil. That grown on black soils, is generally known as a *hingari* crop, while that grown on the lighter soils is known as *mungari* and is sown earlier than *hingari*. It is on this latter class of soil *roseum* is being tried. It is supposed not to be suited for black soils.

5474. (3 and 12) Size of holdings.—The average size of holdings may be taken as about sixty acres. On black soils, about half of each holding would be under cotton each year, while on higher soils only one-third would be sown with cotton.

5475. (4 and 13) Yields and profits and comparative returns.—The average yield is about 312 lbs. of *kaps* on black soils and 750 lbs. on red soils. Cotton is frequently grown on red soils as a mixed crop with *korra*; one row of cotton being sown to two of *korra*. The yield of *kaps* in such cases is about 200 lbs. per acre. The ginning outturn of *kaps* grown on red soils is generally higher than that sown on black soils and therefore commands a higher price. Taking the prices of *kaps* at Rs. 50 and 55 respectively, the profits per acre would be as follows:—

	Hingari.		Mungari.	
	Rs.	a. p.	Rs.	a. p.
Value of <i>kaps</i> per acre	50	0 0	134	9 10
Cost of cultivation, harvesting and carting to market.	15	8 0	27	0 0
	35	8 0	107	9 10

5476. (5 and 14) Rotations and manures.—The usual rotations are cotton and *cholan* (*guar*) or *cumbu* (*bajra*) alternately on black soils, while on lighter soils cotton is sown one year, followed by *cholan*, *cumbu* or *korra* the second and groundnuts the third.

(2) Red soils are generally manured every year, while black soils are only manured about once in five years. Cattle manure is the only kind generally used. This is invariably stored in open pits round the village, exposed to the weather and consequently loses many of its most valuable properties.

5477. (7 and 15) Conditions affecting increase in area.—If the results obtained from *roseum* at all approximate to those claimed for it, there will probably be a considerable increase in its growth. This increase will, however, be mostly on *mungari* lands, which only form a small proportion of the total under cotton. *Mungari* cottons are generally very liable to stain owing to climatic conditions.

5478. (8 and 16) Uses of seed and seed selection.—There is a very keen demand for cotton seed from these districts for Coimbatore and Salem and the bulk is, therefore, sold. Most growers keep a certain proportion of their crop to be hand-ginned for sowing. This seed is generally taken from the healthiest-looking field or part of a field; otherwise there is no special selection. Seed bought for sowing purposes always fetches a higher price, if hand-ginned.

(c) Exotic cotton.

5479. General.—I have no experience of exotic cottons, except for a little *Cambodia*, which has invariably been tried under absolutely wrong conditions and has consequently been of poor quality and has rapidly deteriorated. A certain amount of what is known as American-Dharmar cotton is grown. This is said to be an acclimated cotton from American seed, imported a good many years ago.

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[Continued.]

II.—COMMERCIAL ASPECT.

5480. (30) *Local trade customs.*—The various systems of local marketing, of which I have had experience, are :—

- (i) Buying entirely through dealers forming an association, who guarantee the buyer against adulteration, provided the buyer does not buy except through such association.
- (ii) Buying through dealers who give no guarantee, but merely act as brokers for the seller.
- (iii) Buying partly through dealers and partly from the ryot direct.

(2) From the point of view of the buyer, the first is, as a rule, the most satisfactory, but I question whether it is always the best system from the point of view of the ryot, who is, especially where the market is so distant that he cannot always accompany his produce, very much in the hands of the dealer.

(3) The second system is generally unfavourable to both parties. The dealer is inclined to buy up cheap rubbish and mix it with good cotton sent to him for sale. If it gets through, the dealer makes a profit; if it is detected and penalised, the client loses.

(4) Where purchases are generally made direct from the ryot, unscrupulous buyers are inclined to take advantage of ignorant and illiterate ryots. These often engage a petty broker to look after their interests, but without getting any value for the commission so paid.

(5) I have no experience of an open market under the control of a market committee.

(6) I have had no difficulty under any of the three systems in buying forward. With agents, who know the locality and the more important ryots, contracts are frequently made direct for forward delivery without any very great risk.

5481. (31) *Standardization of commercial names.*—The commercial names of the cottons with which I am acquainted are :—

Westerns.—From the Bellary and Raichur (Hyderabad) Districts and a small portion of Anantapur.

Northerns.—From the Kurnool, Cuddapah and Anantapur Districts and a small portion of Hyderabad territory adjoining the Kurnool District.

Cocos.—Red ginned from the Guntur and Kistna Districts and small portions of adjoining districts.

Fair.—The same as red ginned, but hand-ginned.

White ginned.—A short stapled cotton from Hyderabad territory, the principal centre being Warangal.

(2) All these names are well-known in Indian, English and Continental markets and I know of no reason for suggesting any change.

5482. (32) *Buying agencies.*—The best form of buying agency, in my opinion, is the employment of salaried agents at all principal centres, who get to know and keep in touch with all the principal dealers and ryots, and where such a system is in force, buy as far as possible direct from the grower.

III.—STATISTICAL.

5483. (33) *Improvement of cotton forecast.*—The cotton forecast as far as the Madras Presidency is concerned, is generally very inaccurate. The reason for this is, that in order to synchronise it with the rest of India, it is published in most cases before sowing is anything like complete. As long as this system continues, I see little prospect of its being brought to any degree of accuracy.

5484. (34) *Improvement of other statistical information.*—The cotton press returns will, I consider, not be sufficiently accurate until the returns sent by owners and managers of factories are made compulsory, and power given to verify their accuracy.

5485. (35) *Publication of Liverpool and Bombay prices.*—Most dealers taking any considerable share in the business of an ordinary upcountry market receive from Bombay daily advices of the state of home and Indian markets. To the ordinary ryot such information is of little use.

IV.—MANUFACTURE.

(a) *Ginning and pressing.*

5486. (36) *Type and number of ginned presses.*—I have had the supervision of five pressing but no ginning factories, and am, therefore, unable to offer any opinion as to the respective merits of saw and roller gins. These five factories comprise two Nasmyth, one Hodgart and two Cummins presses.

5487. (37) *Size of bale.*—The sizes of the bales vary from 7 to 8½ cubic feet. The latter are, however, turned out by presses which have been working since about 1872.

5488. (41) *Condition of cotton.*—The Westerns cotton crop is perhaps one of the finest in India. I think I may safely say that it is, without exception, the worst marketed. The faults in preparation begin in the field. Owing to the scattered positions of the villages, pickers have, as a general rule, considerable distances to travel to and from their work. The result is that picking does not start till late in the day, by which time the leaf is dry and brittle and easily gets mixed with the *kapas*. That the cotton, if carefully picked, can be kept almost entirely free from leaf is shown by results I have seen on the Agricultural Department's farms.

(2) Ginning is as a rule carelessly done. The worst offenders in this respect are the small gineries in the villages. These are cheaply and badly constructed, openers are practically unknown and seed pits are seldom provided. The principal reason, however, is the very incapable class of fitter employed. The ginning season is short and owners will not employ permanent men. Fresh hands are engaged at the beginning of each season and their services dispensed with as soon as ginning is finished. Good men are therefore not attracted and the men usually available are practically untrained. As long as gins are kept running, both they and the owners are satisfied. No attempt is made to set gins to suit the staple or class of *kapas* to be ginned. The relative speed of rollers and knives receives no attention. Rollers are used long after they have become really unserviceable and paper rollers are used instead of leather from mistaken ideas of economy. Paper rollers are very much cheaper in first cost than leather, but wear out quicker.

(3) The general result is that the cotton as it reaches the buyer is full of leaf, seed and dirt. Seed and dirt can be eradicated; but leaf, once it gets into the lint, is very hard to remove.

(4) As regards suggested remedies, I would recommend the licensing of factories. The present limitation of the application of the Factory Act should also be abolished. The smaller factories require more supervision

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[Continued.]

from every point of view than the larger. Some fixed standard of qualification should also be required of all fitters in charge of factories. The admixture of more than a certain percentage of seed in ginned cotton should be treated as adulteration. I know of instances where ryots are persuaded to bring their *kapas* to certain factories by the promise of a guarantee of a larger ginning outturn than that of a neighbouring factory. This increase in the outturn was only obtained by the deliberate admixture of a considerable percentage of seed. I have myself detected as much as sixteen to twenty per cent. of seed in so-called ginned cotton.

V.—GENERAL.

5489. (46) Attitude of buyers to improved cottons.—Although I have not known of a regular premium being offered for higher class of cottons, the general practice in the districts, with which I am acquainted, is to regulate price according to quality. This practically amounts to the same thing. Certain firms have recently promised to pay a higher price for cotton guaranteed to be the produce of improved strains introduced by the Agricultural Department, but I have no knowledge as to how far this has been carried out. Short stapled *kapas* generally commands a high price, if not higher than the ordinary kinds owing to its higher ginning outturn. This *kapas* is generally bought by speculative dealers to mix.

5490. (47) Effect of water rates.—I have no experience of cotton grown under irrigation. Black soils are not generally suitable for irrigation.

5491. (49) Effect of tenure of land.—I do not think that the existing tenure of land is likely to affect the extension of cotton cultivation. Holdings are generally permanent and the ryot is quick to see what crops are likely to give him the largest profit.

Mr. W. R. H. WAIT called and examined.

5492. (President.) I have not done any cotton work since Christmas as I have been in Secunderabad starting new work. I had twelve years' experience in the Western tracts generally and I had a little to do with Northern—in the Cuddapah district. I think that Westerns have deteriorated somewhat in staple, principally due to mixing. There has been more of *mungari* cotton grown and it is being mixed with the Westerns. From what I have seen the staple of Northern has remained very much the same. The colour has improved during the last eight years. There is not so much reddish cotton mixed in it. The red and white cottons are kept more separate. I have seen the Hagari Farm. Some years ago, I went carefully through a lot of samples with Mr. Wood who was there at the time. I think that the line of work carried on at the farm might be useful to the trade. What is wanted is to get the staple of Westerns back. If the ginning percentage could be improved and the staple kept at the same time, the ryots would grow the Agricultural Department's cottons to the exclusion of shorter staple cotton. From the cultivators' point of view, ginning outturn and heavy yield are the predominating considerations.

5493. As to forecasts, I think that our own forecasts are more accurate than those made by the Agricultural Department principally because their forecasts have to be prepared too early to suit the crops in these parts in order to bring them out with the forecast for the rest of India. The preparation of forecasts in districts is very largely done by the village officers on the assumption that certain areas will be sown with cotton. The forecasts frequently have to be made before actual sowing.

5494. The ginning and pressing returns will not be of any use at all until they are made compulsory.

5495. I have a very high opinion of Westerns as a cotton but it is the worst marketed cotton of any. The control of ginning factories might do a good deal to secure better marketing. Picking can only be improved by the action of the buyers but there are too many small buyers who do not pay any attention to it. As long as they can find a market for dirty cotton, they do not worry about the cotton being clean. I have tried to persuade the *ryots* that clean picking would pay them. We penalize very dirty cotton. The great trouble is the leaf. The climatic conditions and the habits of the people have a great deal to do with this. In parts of Deccan, the villages are scattered. The fields belonging to a village extend to such tremendous distances from the village that the people cannot go out early in the morning as they do in the south, pick the cotton and come back to the village. In the north, they have to walk a long way and then stay out in the fields for the whole day. Absence of water supply has something to do with it. They often have to carry their water with them. Seed in ginned cotton is not a very important matter because we can take it out to a great extent. My firm has introduced special machines to clean out the seed but once leaf gets into lint it cannot be got out. You can even see it in the cloth. We buy cotton to a certain extent direct from the cultivators. In recent years, the proportion of Westerns cotton machine ginned has increased enormously. In the old days the percentage of machine ginned cotton was small. We buy a small amount of hand-ginned cotton direct from the ryots. The machine ginned cotton is mostly bought from dealers. The dealers buy the short staple cotton which gives them a heavier ginning outturn and mix it with long staple cotton so as to average up their prices. If the cotton is mixed before ginning, it is very difficult to detect, but when it gets to the mills the irregular staple is discovered. We do not do much ginning in the districts in which I have been. I believe that, after the war, as soon as we can get machinery we shall be putting up ginning factories in most of the big centres. We mostly buy lint; we do not buy *kapas* to any very great extent. There is so much humbug going on over the buying of *kapas* that we very often cannot touch the prices.

5496. The smaller ginning factories have all sorts of weights of their own and various tricks in regard to weightment, etc. Unless we were to adopt the same methods we could not compete with them. They ostensibly pay high prices but they make it up in various ways.

5497. (Mr. Wadia.) When we get the lint from the small factories, we always get it mixed. The *kapas* is mixed before ginning and then, of course, it is very hard to detect. It mixes quite easily before ginning but it is very difficult to mix short staple and long staple after ginning. We have introduced machines for cleaning cotton especially Westerns, when it comes to us. We take out something like five to six per cent.

5498. To get the higher types, we have to sell a certain quantity of lower types as well. We have to buy the average and select so that we have to get higher prices for the better quality in order to enable us to sell the lower quality at a lower price.

5499. The mixing that is going on is of Westerns with the short staple *mungari* cotton. There is not very much Bijapur cotton used for mixing with Westerns. I have known "Westerns" cottons sold as "Bijapur" but I have not known Bijapur cotton brought in to be sold as "Westerns." That might go on to a certain extent in the Raichur tract as the greater part of the Raichur Westerns is grown between Bijapur and Raichur. Raichur itself is not the centre of the cotton growing area; it is merely on the railway. Lingsugur is the centre. When the new railway that is being constructed from Hyderabad to Raichur on to Gadag is opened

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a great deal of the cotton business will probably go to Lingsugur instead of going into Raichur. As Lingsugur has no railway connexion at present, the cotton goes partly to Bijapur and partly to Raichur. From the western side it probably goes to Rijapur and Gadag and from Lingsugur it comes in to Raichur. The cotton which has the longer staple is that which has the greater percentage of *indicum*. We consider *indicum* a long staple cotton. Westerns is very largely a mixture of *indicum* and *herbaceum*, the former being the better of the two. In Guntakal cotton, there is a larger proportion of *indicum* than there is in Raichur and Bellary cotton. *Indicum* is a softer cotton but is not quite as white as *herbaceum*, which is harsher and rather coarser cotton. The larger the proportion of *indicum*, the better the staple not only from the actual point of view of length but also from the spinning point of view. I should say that the Raichur cotton is really the purest Westerns cotton, there is the least *indicum* in that. As one gets nearer the Northern tract, the proportion of *indicum* becomes higher. I would suggest that the Agricultural Department should select pure strains and put them out. Another difficulty about the mixture of *herbaceum* and *indicum* is that the two cottons do not take dye in the same way. With a mixture of the two, one gets dyed yarn of a very patchy appearance.

5500. I do not think there has ever been very much damping in the Westerns district but the ginning in the tract is about the worst in India. They do not use openers because they think that it gives them less weight. Adulteration with sand, seed, etc., swept up from the floor is done deliberately in a great many cases. Some times the ryots are persuaded to take their *kapas* to one ginning factory in preference to another by the owner of one factory promising an outturn of say 32 per cent. against the other man's thirty per cent. He simply does it by mixing in more seed. I know that that is deliberately done. If standard ginneries were erected or if the present ginneries were remodelled so as to ensure the seed being kept separate, it would improve matters to a certain extent but the whole system wants overhauling. A certain amount of control is wanted; but it would mean a big staff, because they have started putting up small ginneries in villages right away from the main centres; some of them are thirty to forty miles away from any market. I think all the ginneries ought to be licensed. If the present restrictions of the Factory Act, which exempt factories employing less than fifty hands, were removed, that might do some good too. The smaller ginning factories want looking after more than the bigger ones. I would not make the penalty heavy. The withdrawal of the license would be sufficient, as one does not want to make things too oppressive. As to whether the power of giving licenses should be vested in a central bureau or not, that would depend very much on what the inspecting staff is going to consist of. I should think that the work would be better done by provincial committees. I think it would be better for the provincial committees to have the power of withdrawing licenses. Withdrawal by the Central Committee would be too complicated a business. False weights are used a good deal in ginneries and in pressing factories. I would make the license withdrawable for that offence too. No improvement can take place unless ginneries are controlled. The ordinary village ginneries are not very expensive affairs. Probably it would be just as cheap to pull them down and rebuild as to alter them. I have stated in my written evidence that, as long as gins are kept running, the owners are satisfied. No attempt is made to set the gins to suit the staple or class of *kapas* to be ginned. The relative speed of rollers and knives receives no attention. The owners think it cheaper to go on using old rollers instead of putting in new ones. All this is very largely due to want of competent labour and to a false idea of economy. The owners never, for instance, go into the question of the actual cost of working the gin. They never work out the actual cost per *khandi* of the *kapas* ginned, as a firm like ours does. I do not think that any of the ordinary ginning factory proprietors or managers would be able to tell you what it actually costs them to gin. Seed is sometimes dropped through the gins into the lint because when the knife gets damaged, they go on using it rather than take the trouble of replacing it by a new one. Old rollers are never replaced even if they let the seed through. The question of the setting of the gin to suit the staple of the cotton dealt with is never taken any notice of whatever.

5501. In my written evidence, I have stated that, although I have not known of a regular premium being offered for higher classes of cottons, the general practice in the districts with which I am acquainted is to regulate the price according to quality. It amounts practically to the same thing as saying that buyers pay a premium for quality. A firm does not say that, if such and such cotton is brought to them, they will pay Rs. 5 more than the market price. They pay the market price for the ordinary quality of cotton and for anything inferior they take an allowance. If there is anything better, they do not actually offer a premium but they will actually pay a little more for it. If we could get any considerable quantity of a distinctly higher type of cotton, that would be a different matter and we should certainly offer a premium for it; but we cannot do so for occasional small lots here and there.

5502. We buy cotton forward. I do not think that forward buying tends to improve the quality in any way. If the prices go against the dealer, he is tempted to bring in dirty cotton in order to try to reduce the margin to a certain extent. If the prices have gone against the dealer, the buyer, as a rule, is more lenient in passing the cotton as he is afraid that otherwise he will not get any cotton at all. As things are, we cannot afford not to buy forward, as there are so many mill buyers who want to make sure of their requirements ahead, and if they want to buy forward, we have to meet them. If forward business is to be done away with, a start will have to be made with the actual consumer.

5503. Short staple *kapas* generally commands a higher price than long staple on account of its higher ginning outturn. That is because it is mixed with the better staple. If it were marketed separately, it would not command a better price, but would probably command very much the same price. I am talking of *kapas*, not of lint.

5504. (Mr. Hodgkinson.) In forward buying, we make a contract on the basis of the fair average quality of the season. Very soon after the cotton has begun to come in, we can form an idea of what the average is likely to be. It may mean anything. We do not sell on types equal to the last year's average. There has always been a certain amount of forward buying; but it has rather increased of recent years. I do not think that the tendency of the average quality has been to deteriorate. It is better in some seasons, in others, it is not so good. It varies with the climatic conditions. As to whether when a man sells his cotton forward, there is a tendency to make as big a profit as possible by putting in bad cotton and adulterating with sand, dirt, leaf, etc., that depends on which way the prices have gone. The price is fixed when the contract is made; when the time for delivery comes the price may be higher or lower than the contract. If the price is higher, the dealer is rather apt to adulterate: if the price is low, he is more careful. If a merchant delivers cotton which is higher than the average of the season, he does not get a premium for it if he is delivering it against a forward contract. If he has got good cotton he will sell it "spot" and will not deliver it against his contract: for that he will buy and deliver other cotton. If the quality tendered by him is lower than the average of the season, he is penalized.

[Malra:]

Mr. S. HALLIWELL.

5505. As to whether a mutual allowance clause as in the Bremen contract would work out here in India, I think it would be rather difficult to get the ordinary dealer or ryot to understand such a system. If they could be got to do so, it would be a good thing; but I doubt the possibility. I know that there is hedging in other classes of Indian cotton or in American cotton. If cotton were sold on the Bremen system, it might bring about cleaner cotton but I have had no experience of that side of the business.

5506. (Mr. Roberts.) This working of the "mutual allowance" clause would certainly require an arbitration authority. It would be impracticable up-country without such an authority. I think the principal reason for future buying is that the actual consumers want to cover their requirements. I do not think it is confined to the Westerns tract; it is done practically in all classes of cotton dealt with on the Bombay markets. There is far more in the Berars than there is here. There is an appreciable quantity of Westerns sold ready—something like one-fourth of the crop. It varies very much in different years. This year there has not been very much forward buying of Westerns. In Northern, there has. I do not know the reason for the difference. Most of the Northern crop has been sold forward. As to the effect of a stamp duty on forward buying, I do not know whether it would make any difference. If a man wants to speculate, he will speculate, whether he has to pay stamp duty or not. You could not impose a stamp duty affecting up-country markets and not the bigger markets. I do not see how future buying can be stopped as long as consumers have to cover their requirements. If open markets similar to those in Berar were established, the ryots could be induced to bring their cotton to them for ready sale. The ryots do come into the markets now in the Westerns districts. There are markets at Adoni, Raichur and Bellary. The carts come in and sometimes the cotton is sold before it is taken off the carts. In a great many cases there are certain ryots who go to the same dealers every time. They find out what the prices are that other buyers are offering and as long as the people they are accustomed to deal with offer somewhere about that price, they sell to them in preference. There is no control over these markets; they are as a rule, simply meeting places by the side of a road. In Raichur, however, it is somewhat different. There they have a system of *dahals*, i.e., of brokers who sell on behalf of the ryots. Everything is done through them and they guarantee the quality. If one finds adulteration in the cotton that has been bought, it is invoiced back to the dealer from whom it was bought. I am referring to buyers like ourselves. It is much better for firms to have their own agents up-country. The best plan would be for the mills to have their own buying agents or to buy through big firms. If *lupus* were bought instead of lint, it would have a tendency to improve the quality, that is, if firms have their own ginning factories. So long as the ginning is done by big firms, it is immaterial whether one buys *lupus* or lint. In Tinnevely, in all cases the lint is bought from the dealer but the *lupus* comes into one's own ginning factory, where it is ginned for the dealer and he is given back his seed. In the Westerns districts, one has to buy *lupus*, seed and all and to dispose of the seed one's self. The ginning factory owners in the Westerns district are not large buyers. As dealers, they are interested in passing the cotton as dirty as possible whereas if they merely ginned on commission we could probably demand a higher standard. Where we buy *lupus*, we get it ginned at ginning factories the proprietors of which are willing to meet us on this point. We always send our own men to supervise the ginning and we see as far as possible that they keep their pins in proper order.

5507. I have seen the Hagari cottons. We have bought some; but I do not think we bought it direct from the farm. That was the year before last. It was distinctly two classes better than the ordinary Westerns. It was whiter, cleaner, better ginned and better and more regular in staple. The staple of good Westerns averages about $\frac{3}{4}$ ths inch. The longest is about an inch. It never goes above an inch and varies between $\frac{1}{2}$ ths inch and an inch. The average staple of Northern is about an inch or perhaps a little over. The staple of Hagari No. 1 was above the average of Westerns. As far as I remember, it was about an inch. I have had no experience of Nandyal. We have no buying agency in Nandyal itself. I do not think that Hagari cotton has been put out recently. The Agricultural Department is still experimenting as to whether it got to the distribution stage yet.

5508. There is not a very large difference in Westerns, i.e., in Westerns grown in Hyderabad and Bellary. The proportion of *indicum* increases as one goes south and east. The cotton becomes redder and is not quite so white but is slightly better in staple. But the change is very gradual. I think there is rather more of *indicum* down Guntakal side in recent years. For instance, Timmancherla cotton was preferred by Bombay to any other. That was almost entirely due to the larger proportion of *indicum* in it. Timmancherla is two miles from Guntakal. The cotton produced from red soil is rather better but is mixed with the other.

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[Continued]

(2) Seventeen years ago, I was for many years in the cotton markets of the Central Provinces, and had considerable experience of the middleman. Not very far from Nagpur, a Marwari came to the *taluk* with the proverbial *lota* and *dhoti*, and in a little over twenty years amassed a fortune—so it is reported—of Rs 80 lakhs. I can honestly say that he cheated both the ryot and the purchasing firms because I saw in that market three qualities of staple established out of one original quality, the result of the ryot taking seed from the gun pits whose germinating points had been ruined by machine guns of the worst neglected type. The aforesaid Marwari, needless to say, not only had the ryots in his hands, but controlled most of the ginning factories in the neighbourhood. The unfortunate ignorance and lack of commercial knowledge of the ryot is no more pathetic than the lack of scientific knowledge of the majority of the actual consumers and manufacturers of the staple.

(3) Your Committee has headed two of its series of questions:—

- (a) *Deshi* short staple cotton
- (b) *Deshi* long staple cotton

My practical mind would substitute the following:—

- (a) *Deshi* unusable staple cotton
- (b) *Deshi* usable staple cotton

(4) In the present Madras Exhibition, the Agricultural Department of Madras is showing a board with a diagram and figures proving to the ryot the advantage of selected against unselected seed. If I remember rightly, the excess of profit from the selected as against the unselected seed is Rs 33 12 0 per *khanda* of 500 lbs but what is the use of these figures to the ryot if every time he is in the hands of the middleman? Then again, if it is true that the middleman gives him a bonus for growing short staple cotton, is the ryot likely to pay more which he has to do for selected seed and grow a long staple cotton yielding eight to ten per cent. less lint, if he eventually, due to the middleman, derives no material benefit?

(5) I now come to the crux of the situation. We must first do away with the middleman. Probably your Committee will say that this is impossible. The Government of India cannot reach the middleman, and this is probably true, but the middleman must be reached, and ought to have been reached half a century ago, by the spinners and manufacturers of India.

5510 *Responsibilities of mill-owners for unsatisfactory state of cotton crop*—Twenty five to thirty years ago, the Managing Agents of the majority of the mills in India were remunerated by a percentage on outturn and, due to this iniquitous system, their sole idea was to buy the cheapest possible cotton, spin 10s yarn for the China market, and amass large fortunes by a commission of 2½ per cent on outturn. They encouraged the growth of unspinnable cotton. Of late years, they have lost mostly the China markets, due to a series of circumstances and they are now turning their attention, many of them, to a usable staple in order to cater for a better quality of yarn and cloth for the better class of Indian trade.

(2) The Government of India has, doubtless, been moved on their behalf to appoint the Indian Cotton Committee, but I have no hesitation in saying that the mill owners of India and of Bombay in particular, are entirely responsible for the unsatisfactory state of the cotton crops of India as a whole, and that the Government of India, through the Indian Cotton Committee, will not arrive at their object as easily as if the whole responsibility was thrown back on to the shoulders of the spinner and manufacturer, where it rightly belongs. The so called managing agents or proprietors of many of the mills in India do not know the limitations of their machinery, and unfortunately for the good of the trade and the benefit of India as a whole, the mill labourers of India are not organised on the lines of European countries. While the Government of India may not be able to do away with the middleman, a thorough organisation of mill labour in Bombay on the lines of European countries would do away with the middleman in less than three to five years. There would be no market for short stapled unspinnable cotton, because if the mill labourers of India were organised, they would not be called upon to work like slaves as they have to do in many of the mills in India, due to short stapled cotton. The middleman therefore thrives on the ignorance of the ryots and equally thrives on the spinners and manufacturers because the latter have no restraint placed upon them due to the non organisation of the mill workers in India.

(3) I have been in India 25 years and made thousands and thousands of practical tests from almost all cottons in India, and I can assure your Committee taking 20s yarn as a basis that no cotton ought to be allowed in any mill in India under a test strength of 65 to 71 lbs. per lea or 80 threads of 20s yarn. This at once would eliminate short stapled cotton.

(4) For the information of your Committee, I will at random take from my Special Test Book a few examples of cottons that do not exactly come under the term "short staple," but due to the middleman again, their price is prohibitive to turn into 10s yarn, because the latter would have to be spun at a loss:—

Test strength in 20s.

"Fully Good" to "Fine" Machine Ginned Oomra "Amraoti" not classed as short staple	16 lbs
"Fully Good" to "Fine" Machine Ginned Oomra good staple "Khamgaon"	22 "
Superfine Machine Ginned Oomra "Karnja"	16 "
Fine to Superfine Machine Ginned Oomra "Murtzapur"	25 "
Machine Ginned Good to Fully Good Chukli	33 "
Superfine to Choice Machine Ginned, Yeotmal	30 "
Bhavnagar cotton	33 "
Parbhami cotton	37 "
Khamgaon cotton	20 "

The above cottons are not classed as short staple, and command a relatively high price in the market, due to the cleverness of the middleman, and the lack of scientific knowledge on the part of the consumer.

(5) I will now give you another example of Tinnevely cotton, on which crop the Madras Agricultural Department has spent considerable time and labour and is doubtless doing a great deal of good. On the 13th of April 1916, I received a Tinnevely sample of cotton, test strength, 46lbs in 20s. A few days later I received from the seller another sample of Tinnevely cotton, test strength in 20s, 91 lbs. These two tests bear on Mr. Thomas's remarks with which I headed this report as follows:—"It is the middleman who makes the additional profit on *pulchrai* due to its high lint outturn. He gives the ryot a small bonus for growing it. But even the middleman can only make a profit on it as long as he can cheat the purchasing firm by calling it Tinnevely cotton." I was the receiver of the above two samples. I was not cheated by the middleman because I am the actual user, and the welfare of the business over which I have the honour to control depends on my practical knowledge in detecting malpractices which do exist as shown by the above two samples under the heading "Tinnevely."

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[Continued.]

(6) I could give you from my book scores of instances similar to the above, but I will no further encroach on your valuable time.

(7) In my opinion, the Indian Cotton Committee has an insurmountable task before it in its endeavours either to improve the condition of the ryot or improve the staple of Indian cotton, if not supported by the mill-owners of India who are actually responsible for the unfortunate position we find ourselves in to-day, viz., an inadequate supply of long staple cotton to meet the growing demands of the industry. It is not likely that we shall see mill-labour organised in India to the pitch that I have suggested early on in this report, but if the Government of India would appoint Inspectors of Factories to decide on the maximum breakage of thread allowed for the various counts spun, they would eliminate from the various markets short staple cotton much sooner than any Indian Cotton Committee and incidentally do away with the nefarious practices of the middleman, and probably in time eliminate him altogether.

(8) The Third Cotton Forecast for all India for 1917-18 has been issued by the Department of Statistics and shows that the average outturn per acre of the present crop for all India is 66 lbs. when compared with the average outturn in America for the last few years, of say 200 lbs. per acre, and I should like to know if all this is due to climatic conditions, or to want of suitable manures, which the ryot is undoubtedly unable to purchase, due to the small margin of profit per acre which is left to him only by the middleman.

5511. (45) Effect on cotton market of replacement of short staple cotton by long staple.—There is one question put forward by your Committee which particularly attracted my attention, viz., No. 45:—

"What, in your opinion, would be the effect on the cotton market generally if any large proportion of the short staple cotton at present grown in India were replaced by long staple cotton?" The effect, in my opinion would be a tremendous filip to the industry as a whole, enormously increased profits, and the solution of the labour difficulty in the mills of India, which has baffled the Managing Agents and Owners for the last twenty years.

Mr. S. HALLIWELL called and examined.

5512. (President.) I have got strong views in regard to the organization of the cotton trade. The middleman should be got rid of but the biggest sinner is the manufacturer. That is what I have indicated in my written evidence. Of course, the root of all our trouble is short staple cotton. If the spinner does not turn it down, who will? The spinners themselves ought to organize; if the workers, i.e., the mill operatives, were organized, they would turn it down. In my opinion, forty per cent. of the cotton in India is unspinnable. Cotton that answers only to a test of 45 lbs. for 20s. is not usable for 20s. A weaver ought not to be given a cotton under 75 lbs. strength for 20s. In Lancashire, a manufacturer would not take for 20s. a cotton which did not answer to an 85 or 90 lbs. test. Such cotton is only usable for 10s. I would have certain tracts scheduled and selected seed given to the ryots. If the right seed were given out, short stapled tracts would grow longer stapled cotton. When I was in the Central Provinces, the Hinganghat *bani* was being grown. That is a long staple cotton but then they developed three classes of cotton—*bani*, *jari* and *zoda*. All that tract is now practically a short staple tract. It is well known that cotton from Wardha used to be taken down to Hinganghat, pressed there, stamped with the Hinganghat mark and passed off as Hinganghat. The demand for cotton has increased enormously of late years and that enables the poorer stuff to find a ready market. I am of opinion that the short staple cotton keeps the price of the long staple down because it is used for mixing. We could afford to pay much more for long staple cotton of one inch or 1½ inch in length. The short staple is competing with the long. That is the difficulty. The only solution is discrimination in buying with no limitation in manufacture. Undoubtedly a good deal of mischief in the way of mixing is done in the ginneries. I would schedule tracts suitable for growing cotton of a certain staple; give out selected seed and legislate to compel the ryot not to adulterate the cotton and to produce what that particular tract is capable of producing. I would have the ginneries licensed.

5513. I have been 26 years in India. My experience is that cotton has deteriorated very considerably, largely owing to increased demand and consequent mixture. I think the time will come when the short staple cotton will get down to its bed rock valuation. The present phase is only a temporary one. At present the short staple cotton is getting an exaggerated price. If there is a steadier demand for long staple cotton and if short staple cotton is sold in a pure state, the latter might automatically be pushed out. The demand for it is a spurious one. If you want to improve Indian cotton, you must commence at the right place. The quality of the cotton depends on the quality of the seed given to the ryot. Certain tracts will not grow cotton of as long staple as other tracts but there are tracts in India in which they are growing short staple which would grow long. I want to eliminate short staple cotton from tracts which can grow long staple. I think the word "outturn" is an evil in the way in which it is regarded in cotton mills in India. The mills were started with the one sole idea of outturn at all costs—work labour 15½ hours a day and produce as much as you can. The history of the Calcutta mills is a fine example of this. No limit was placed upon the working of the machinery and as a result the Calcutta mills have been an absolute failure with perhaps one exception. They ought to have been a success. They had the advantage of cheap coal and a river close at hand. If any industry ought to have been a success, it was the Calcutta mills. Short staple cotton and over working of labour were the principal causes of failure. The cheapness of their coal should have compensated for the longer railway lead as regards long staple cotton. One of the largest items of expenditure in the mills is coal. It costs me Rs. 34 per ton. I use 12,000 tons a year, i.e., about 40 tons a day. I use 1500 bales of cotton a month or 18,000 bales a year. The Calcutta mills were ruined by working on short staple cotton and the mills are not worth anything today. I had four years' experience in the Calcutta cotton mills.

5514. My mill is in French territory and there is no Factory Act in force in it. We work eleven hours. We work the press about 10½ hours. We never exceed eleven hours. We have no trade union in the mill. The Trade Unions at home dictate to the employers what cotton they should spin. That is why the organization of the Lancashire cotton trade is so efficient. The Unions stop twelve Lancashire spinning mills a year for bad spinning. If we could do that in India, we should eliminate short staple cotton in five or six years' time. It is the source of all our trouble. We want organization. In Lancashire, only a certain percentage of breakage is allowed. I do not say that no cotton should be grown which cannot bear tests of less than 65 lbs. in this country. There are rough purposes for which such cotton could be used but I do maintain that the difficulties that we are contending with today such as the mixing of short staple cotton with long should be dealt with in a proper way and that the mills in India and particularly those in Bombay should turn down mixed cotton. I test every bale of cotton I purchase up to the spindle point before I buy it. The tests indicate the enormous amount of cotton that is now palmed off on to the market at spuriously high rates. The

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workers would not allow it to be used in any other country than India. I select cotton from samples and Messrs. Best and Co., who supply us, buy accordingly. I have had no experience in up country markets in Madras. We use Westerns, Northern and Surats principally.

5515. I should like to emphasise my opinion in regard to the use of Broach as the standard in Bombay. Broach is used in India as a standard to get in and get out. It is the basis like Middling American at home. It is used both for the appreciation of values and the reduction of values. The Broach test is 40 pounds for 12s counts. Is not that much too low a standard on which to base all Indian cottons? The standard ought to be much higher. The standard in Bombay ought to be the very best cotton in India instead of paying points on.

5516. As to mixing in the ginneries, I know that they take the seed indiscriminately from the pits and, of course, one then gets mixed cotton. If short staple cotton were marketed separately and were not allowed to be mixed, I do not think that it would tend to a disparity in the rates of long and short staple cotton. I am rather of opinion that I would have tracts scheduled and have selected seed under the control of the Agricultural Department or some scheme of that description. The tracts should possibly be scheduled by law. It would be very advantageous if we could compel the ryot to grow the Agricultural Department seed and nothing else but I doubt if it would be feasible. I think the Agricultural Department should have selected seed which they should offer to the ryots on most favourable terms. If they refuse to take the seed, the Agricultural Department should throw their cotton back on to the market and make it valueless. The shortage of cotton has been the cause of introducing the cultivation of short staple cotton into certain tracts in Madras and the ryots have naturally found a ready market for such cotton. I maintain that the ryots could be controlled indirectly by prohibiting bad spinning in the mills in India and by limiting them, as they do in Lancashire, to a certain breakage. That would automatically put certain cottons on the black list. It would also prevent the middleman for acting with any assurance in encouraging mixed cotton as he would know that probably next year that particular cotton would be on the black list. The mills in India use about two million bales roughly. In normal times, $1\frac{1}{2}$ million bales are exported to Japan and $\frac{1}{2}$ million bales to Europe. Of a total crop of about $4\frac{1}{2}$ millions bales, I would put forty per cent. roughly on the black list. The other consumers of short staple would get the cotton cheap and would get the advantage of it. I do not think that, in Japan and in Germany, there is any restriction as to the kind of cotton to be used. I do not think that it would handicap the Indian mills to put cotton on the black list. I think they would increase their profits enormously by raising their standard. If they produced a better article they would obtain a bigger profit on it. It is a strange thing that, when cotton is selling normally at 6d or 7d, it is said that the Indians are poor and that they cannot afford to pay that price. Cotton to-day is four times its normal value and there is more trade than ever. The theory that Indians cannot pay for a really first class article within reason has been knocked on the head. I maintain that if you pay a higher price for long staple cotton you benefit the ryot, you benefit yourself and you get a bigger market for your sales. We sell our cloths in India, Madagascar and in China. We sell mostly in the French colonial markets in which there is a protective tariff from which to a certain extent we get some advantages. We are selling to-day in India with larger profits than we are getting in the French colonial markets. We have placed more manufactured goods on the Indian market, I should think, in the last seventeen years than we have in the French colonial markets.

5517. (Mr. Hodgkinson.) I was brought up in the Oldham district in Lancashire. I get home every two years and I am in fairly close touch with the Trade Unions there.

5518. We use the term long and short staple cotton in India but as a matter of fact there is no long staple cotton grown in India. I should call an inch medium staple and $1\frac{1}{2}$ inch long staple. When we go down the scale on the other side we get $\frac{3}{4}$ inch in Bengals. Anything under $\frac{3}{4}$ inch of an inch, I should call short staple. A staple of $1\frac{1}{2}$ or $1\frac{1}{4}$ inch would satisfy our requirements for all the counts that we use in India. We do not get a staple of $1\frac{1}{2}$ inch in India. The staple of Surat and Navsari is $1\frac{1}{2}$ inch, that of *Karunganni* and *Tinnevelly* is about $\frac{3}{4}$ inch. But, of late years, in order to make my tests more easily understood by the layman, I have not been measuring the length of staple but giving strength as an easier indication. An inch staple would answer to a test of about 70 to 75 lbs for 20s. with the standard twist. I think that 30's wet would be all that would be got out of an inch staple at home. I have received samples of many of exotics such as Punjab American, but have not been particularly struck with any of them. In my opinion, we have got the best results of late years from Surats. Broach is looked upon as a standard in India. In normal seasons, Broach is up to 16s counts but not beyond. I am very doubtful if you could replace American cotton by cotton grown in India. If the ginning and picking of the Northern cotton grown at Nandyal were improved, it would spin up to 30s and 40s but not higher. I do not think that India could produce an Egyptian cotton.

5519. I do not think that the Indian mills are paying a proper premium for long staple cotton. A few only of the Indian mills recognize the value of good long staple cotton. Undoubtedly if that cotton were sent home a bigger price could be got for it. Lancashire would pay more for it than the people in Bombay. Lancashire does not get it because it is too adulterated and there is undoubtedly a prejudice in Lancashire against Indian cotton on account of the mixture and uneven staple. They think that Indian cotton cannot be relied upon. I am making cloth out of Surat cotton that pays handsomely. I hardly think that a Lancashire buying agency would be able to get good cotton by even paying a premium for it.

5520. We buy up country and we have more or less to take a fair average of the season. We have agents in the up country market; with 500 carts arriving in one day, they have to take the whole lot and class it as a fair average of the season. I think it would work satisfactorily if we could get Punjab American cotton either pure or guaranteed as mixed with one per cent. of *deshi* cotton but if the percentage of mixture is heavy, it is fatal. It is very difficult in up country markets to detect mixed cotton; one can do so roughly but when it comes to spinning yarn of a certain strength one must have absolute uniformity. I cannot tell whether *deshi* is mixed with long staple in lint if the mixture is up to ten per cent.

5521. If the spinners of India were to assist in the matter and work in conjunction with the Agricultural Department and render all possible assistance in eliminating bad spinning from their mills, that would get at the root of the whole thing, in my opinion. If a few Trade Unions as at home were to be started, it would benefit India very much indeed. The sole idea of the middleman is to get things absolutely at rock bottom price. The weavers in India, in my opinion, are well up to the standard of the goods we are making; but when you try to put on to the yarn seventy or eighty per cent. of size, the thing is utterly absurd. The trouble is due to the avaricious middleman, who does not care about quality as long as he can get cloth at a cheap rate and foist it on to market. I am putting eight per cent. of size where I was formerly putting 45 per cent. We are making an infinitely better cloth and making more profit.

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5522. If you don't ask impossibilities from the work people of India, you find they are quite good workmen. I can get labourers by the hundreds. I have had my mills short of labour because I tried to spin too cheap an article. The work people are much better, now we are turning out a better article. We have one loom for each weaver. I find that, in working out the cost of cloth in Lancashire and in India, the incidence is about the same. The wages of the Indian mills work out at about the same as in Lancashire. I would not allow one man to work two looms in my mill. Low wages do not pay.

5523. (*Mr. Roberts.*) The great difficulty with regard to staple is that the users are not able to value it properly. They do not assist much. It would be a good thing to have a clearing station where spinning tests could be made of different qualities of cotton for the whole of India. I have no experience in Madras of buying up country. I have never visited any of the up country markets in the Madras Presidency. When I was in Berar, I used to buy ginned *docras* in Kamptec once a week. I never made any forward contracts. I bought ready cotton. Good cotton does not necessarily get a proper premium because the lower staple cottons compete with it. This is due to there being no limit on the spinners. They can put into their mills anything which they consider suitable. That keeps down the price of the better staple cotton from which we get a better article and higher value and certainly more money. That has been my experience for the last five years. The premium for short staple has gone up. We can now make more money for finer counts than for lower counts. We cannot spin 10s. yarn today and make a profit. For the last three years I have not bought any cotton for 10s. Ten years ago we used to make a fairly satisfactory profit on the 10s yarn, but there has been no profit on it for the last three years.

Mr. H. P. M. RAE, Managing Director, Bombay Co., Madras.

EXAMINED AT MADRAS, MARCH 5TH, 1918

Written statement.

II.—COMMERCIAL ASPECT.

5524. *Preamble.*—My firm are dealers in cotton and, as I personally have no knowledge of the agricultural side of cotton and only a superficial knowledge of the different methods of marketing the cotton at the upcountry markets, I propose to confine myself to the Commercial, Statistical and Manufacturing (so far as ginning and pressing are concerned) aspects of the question.

5525. (30) *Local trade customs.*—I have no experience of local conditions in the districts beyond such as I have gathered from the point of view of a Head Office having to know roughly the principles on which its subordinate agencies buy.

(2) *Roughly speaking:—*

In the Tinnevely District, dealers and ryots bring their *kapas* to our ginning factories, take an advance if the cotton cannot be ginned at once and a final settlement is made on the weight of actual cotton as it comes off the gins, the seed being returned to the dealer or the ryot. In the past, cotton has usually been bought when brought into the markets or for delivery two or three weeks ahead, but the high prices ruling at present have resulted in a large business having already been done (I am writing at the end of January) in 1918 season cotton for delivery up to the end of May.

(3) In the Westerns and Northern districts, the ginned cotton is brought to the presses and weighed over and paid for. In the solitary instance of Prodattur, the cotton is weighed over in bales after pressing. Contracts have always been made for rather further ahead than in the south, but this year, as in the south, the period has been much extended and cotton has been contracted for as far ahead as June and July delivery.

5526. (31) *Standardization of commercial names.*—The various grades of cotton my firm deals in are—

- (1) *Westerns* from Adoni, Bellary, Raichur, Guntakal and surrounding districts.
- (2) *Northerns* (Red and White) from Prodattur, Nandyal, Kurnool and surrounding districts.
- (3) *Red Coconadas* from Guntur, Bezwada and surrounding districts.
- (4) *Cambodias* from the Tinnevely district and also from the country roughly between Coimbatore and Dindigul.
- (5) *Tinnevellies* from the Tinnevely district.
- (6) *Karunganni*, an improved Tinnevely strain introduced into that district by the Agricultural Department four or five years ago.

(2) The standard of Nos. 4, 5 and 6 is much higher than Nos. 1, 2 and 3 which should repay selection and breeding by the Agricultural Department: in fact, as I point out in my note on long *versus* short staple cotton; if Nos. 1 and 2 respond to selective cultivation they should turn out to be two of the best, if not the best two, cottons in India for staple, strength and colour.

(3) I think it would be a mistake to try to standardize names, as the same cotton grown in entirely different areas may, and probably will, develop different characteristics, small or great, and the name will naturally be judged by the poorer cotton. As a matter of fact, standardization of names would not last, as if the quality from any one area proved to be much better than that from other areas, a new name would be invented for it by the cotton trade here which would be accepted in Liverpool, Japan, Bombay and other markets to differentiate it from the inferior stuff.

III.—STATISTICAL.

5527. (35) *Publication of Liverpool and Bombay prices.*—I don't see any object in the daily publication of Bombay and Liverpool prices in the upcountry markets as it is merely a question of ordinary procedure such as any business man carries out for himself and he usually prefers his own information to that supplied him gratis and, in ninety-nine cases out of a hundred, would continue to get his private information in addition to official prices. Our experience both in the south and west at all our cotton buying agencies is that dealers and ryots have full knowledge of Liverpool and Bombay quotations (as required) as early or often earlier than ourselves.

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[Continued.]

IV.—MANUFACTURE.

(a) *Ginning and pressing.*

5528. (40) *Factory Labour.*—We find no difficulty in getting labour except in the case of capable mechanics and fitters, of whom the supply in this Presidency appears to be infinitesimal. It is essential, especially for ginning factories, which require attention to turn out good cotton, a subject to which I refer elsewhere in this statement, to have constant capable expert supervision, and this we endeavour to maintain by having European engineers who inspect the factories regularly and do their best to train the fitters and keep them up to the mark. In the west of the Presidency, the lack of fitters is especially noticeable.

5529. (41) *Condition of cotton.*—Occasionally in the south, *kapas* is brought to our ginning factories in a wet condition but this is usually only in the first two or three weeks of the season and so far as we are concerned, the practice defeats itself as it is always refused and having been re-dried betrays itself by a lack of brightness. I understand the practice is confined to some of the smaller ryots who sell their *kapas* outright to dealers and who naturally get more favourable weights by watering it. It is difficult to suggest any means of stopping it and, as it is done on only a small scale and must entail a loss on dealers, it ought to die out naturally.

(2) In the Westerns district, the condition in which the cotton reaches our presses is almost invariably unsatisfactory, being full of leaf, seed and dirt. The reasons for this according to my information are (1) bad picking; (2) bad ginning due to lack of expert supervision and disinclination to spend money to keep the gins in proper order with the result that the rollers are usually cut about and the machines generally in bad order so that the fibre is cut and the cotton full of chopped seed; and (3) the practice obtaining among the small gin owners of competing for ryots' and dealers' favours by guaranteeing a better outturn of cotton from the *kapas* than neighbouring gin owners which, of course, can only be arranged by filling up the ginned cotton with seed and dirt to make up the required weight.

(3) For the sake of the good name of Westerns and Northern, to which I refer in another part of this statement, an endeavour should be made to put a stop to these reprehensible practices, and the simplest means that occur to me at the moment would be a strict and constantly periodical inspection of all ginning factories both from the engineering and cotton points of view under the control of the Agricultural Departments. The cost of this would no doubt be heavy but the increased value and the improvement in the good name of Indian cottons should justify the outlay though it would probably not result in any actual cash recompense to Government.

V.—GENERAL.

5530. (46) *Attitude of buyers to improved cottons.*—My firm have always been prepared to encourage the growth of improved cottons by paying a premium for them: please refer to my remarks on *karunganni* in my note on the general question of long *versus* short staple cotton.

5531. *Long versus short staple cotton.*—I have no expert knowledge of the agricultural side of this question beyond a general idea that most of the short staple varieties seem to yield more *kapas* to the acre and more cotton from the *kapas* than most of the long-stapled cottons do, so I intend to confine my remarks to the commercial side of the question, *i.e.*, the point of view of a cotton dealer seeking how best to fulfil the wishes and needs of his buyers, the spinning mills, and therefore to encourage the growing of the most valuable and marketable cottons.

(2) Practically all the cottons in this Presidency may be described as long-stapled varieties with the exception of Red Coconadas of which I know very little beyond that, in its pure state and unmixed with white cotton as it has been for some years past, it is a very suitable cotton to spin yarn and weave cloth for dyeing purposes as it takes dye very well.

(3) The principal outlets for Madras cottons prior to the outbreak of war and since then are roughly as follows:—

Westerns—

Pre-war—Germany, Austria, Italy, Japan, Bombay mills and Madras mills.

Since war—Bombay Mills largely, Japan and Madras mills.

Northern—

Pre-war—Belgium and Madras mills.

Since war—Madras mills and Bombay mills.

Tinnevelly—Cambodias—

Pre-war—Bombay, Madras and Southern Indian mills, Japan and Liverpool and small quantities to Italy, Germany and Austria.

Since war—Same except Germany and Austria.

Karunganni is only coming into the commercial stage during 1918 and the one or two thousand bales we were able to buy during 1917 were principally distributed between Liverpool and the Madras Mills.

(4) Granted that all these five varieties are long staple cotton, it may pertinently be asked why Liverpool never took any Northern and Westerns. The reason lies in the fact that both cottons are badly picked, badly ginned and generally full of dirt, seed and leaf, so that the blow room loss varies from sixteen per cent. to twenty per cent. with occasional lots as good as fourteen per cent. and as bad as 24 per cent. Lancashire spinners, I understand, are not accustomed to handle dirty cottons and dislike them intensely with the result that the Continent and, later, Japan were the sole buyers outside India. On the other hand, the well picked, well ginned clean cottons of the south have always found favour in Liverpool for mixing purposes and, since the war broke out, the Lancashire spinners' willingness to buy them seems to have increased: the blow room loss on these cottons varies from six per cent. to eight per cent.

(5) The case for long-stapled against short-stapled cotton commercially lies principally at the moment in the fact that the Indian mills are using more long staple cotton than they have ever used before, due to the great difficulty in importing Manchester piecegoods which has caused them to weave finer cloths to try and

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[Continued]

5537. *Karunganni* is an improved Tinnevely. It is not as white in colour as Tinnevely, but it is a very good cotton. We have had extremely good reports on it from Liverpool. I approve the policy of the Department in pushing it.

5538. We had a large staff of European agents for buying in the districts previous to the war; at the present moment we have only two, one in the south and one in the west. We used to have about three European agents in each cotton tract, i.e., in the southern tract, and the Northern and Western tracts. The European agents are inspectors and supervisors. We have an Indian agent in charge of each factory and each buying agency. We pay according to qualifications up to a certain limit of salary and in addition give an annual bonus for good work. The larger part of the remuneration depends on the *bonus*. The Indian agents are generally self trained. They are natives of the district and probably entered our service as clerks. They have proved very satisfactory in the south but not so satisfactory in the west. It is very difficult to get the right class of man there.

5539. *Kapas* is brought in to us in the south because we have got ginning factories there. In the north and west, we buy nothing but lint. We do not pay for the seed in the south, as the ryots insist on having their own seed returned to them. The *kapas* is brought in to us and we advance on that at once and return the seed after ginning.

5540. I keep in particularly close touch with the Agricultural Department. I know what is going on and discuss things with them. I think we can both help each other. I should say that, as far as the south is concerned, the Agricultural Department is working on excellent lines but that they are not quite so advanced in other districts.

5541. I do not think that the standardization of names is practical politics. If *Karunganni* had been classed as Tinnevelles, it would not have been long before it was being sold under some other name than Tinnevelles or on standard types. Our work is done mostly on types.

5542. As to the cotton forecasts, I do not know how far they are to be relied on in other parts of the country. I think it is a very difficult thing to make a forecast for this Presidency and to satisfy at the same time the rest of India. As far as we ourselves are concerned, we simply go on the report of our agents. The Agricultural Department and the trade might assist each other a good deal in obtaining information as to the state of the crop. This has been done this year.

5543. I do not think that the publication of Bombay and Liverpool prices would be of any advantage to the cultivator, as far as the dealers are concerned, our agents complain that the dealers know all about prices sooner than they do.

5544. (*Mr Wadia*) Generally speaking, there is a greater scramble for long staple cotton than there used to be in India. As I said just now, before the war a great deal of Westerns used to be exported to the continent, more of that is now being consumed in this country. I should say that the reason for the increased demand for long staple cotton in India is that the mills are spinning finer counts and weaving finer cloths to replace the stuff that used to be got from Lancashire. They are now making shirtings and checks. I have handled a certain amount of mill products from the Vishnu Mills at Solapur.

5545. The Bombay Company's cotton gets better prices in Bombay than other cotton. That is probably because we are very careful in our selection, and do not mix; we try to clean the cotton better. We have been experimenting for two or three years with cleaning machines. We knock about six per cent out of the ordinary Westerns cotton before we market it. What is tendered to us would not be mixed to any great degree. Our agents know sufficient about it to spot a mixture if it is at all a heavy one. We have no gins in the Western districts. We do not buy the *mungari kapas*. It is very much mixed and a good deal of it is very inferior. Seed, leaf and stones are mixed with it. The cultivators hold it up and mix it with the later crop. It forms about ten per cent of the crop in the Bellary district.

5546. I should say that the bulk of the mixing which goes on is done deliberately in the gins and presses and that cotton is deliberately damped. I do not know what suggestion to make to stop this deliberate mixing beyond having some form of control over the ginning factories. That would make a very marked difference. I am in favour of the licensing of ginners. Some of the smaller factories do not come under the Factory Act; I would have them all under the Act. If it were possible to license ginning factories, I would take the license away and fine them if they do not keep their machinery in decent order. That would certainly improve the cotton turned out. I think there is something in the complaint that there is a shortage of fitters and that that is why the people are not able to keep their gins in order. There is the greatest difficulty in getting fitters, especially in the Western tract. A gin fitter has to be more capable than a press fitter. Our European engineers try to keep the factories up to the mark. I do not know whether it would be any good, if there were a system of licensing of ginners to insist that certificated fitters should be employed in ginning factories. I presume if the demand arose for them it would only be a question of paying them. Down in the Tinnevely district, there is no deliberate mixing. The south is better in that respect than the Western and Northern tracts. Some short staple cotton has recently been brought in from the Central Provinces into the better tracts. We only heard of it this year. We were informed that the seed that was brought in was sold at a very high price because it gave a very heavy yield.

5547. The prohibition of the movement of *kapas* or loose cotton might be a hardship in some places, i.e., in the case of moving cotton by rail from a place where there is no press to a place where there is a press. Take the case of our ginning factory at Kadambur, which is thirty or forty miles from Tuticorin. We have a ginning factory there but no press. It suits us to rail the cotton down to Tuticorin in sacks and get it pressed there. It would not be worth while to instal an expensive hydraulic press for only a small return. If licenses were given in exceptional cases like that, it might overcome the difficulty.

5548. As to the question of short staple giving a better yield per acre and a higher ginning percentage and so paying the cultivators better, I think it all comes back to the question whether short staple cotton will get the same price in future. If mixing were stopped and short staple cotton were marketed separately, it would get its true price instead of an artificial price and the difference between the price of the short and long staple would naturally widen.

5549. I understand that the bad pulling in the Northern and Western tracts is due to the difference in the habits of the Telugu and the Tamil. The Tamil gets up very early in the morning, does his work and has his rest in the middle of the day. The Telugu lives at a distance from his fields and so does not go out to work.

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[Continued.]

till late in the day when the leaves are brittle and the cotton cannot be picked clean. There is no chance of securing clean picking unless it can be brought home to the cultivators that it will pay them better. It is entirely a question of price. If a higher price were paid for clean picked cotton, I think it would probably take a long time before it filtered down to the ryot. The first person to benefit would be the dealer. It pays pickers to pick cotton dirty as they are paid by a share in the crop. Clean picking would mean a complete change in the habits of the cultivator. The difficulty is that, when leaf gets into cotton, it cannot be properly cleaned. Seed and dirt can be taken out but not leaf.

5550 The trade has been successful in conjunction with the Agricultural Department in eradicating *pulichai* but, if there had been a lot of small buyers, they might not have been able to combine to bring this about. I do not see how the same system could be adopted in other provinces. It would be impossible to get the necessary combination.

5551. I trust to licensing of ginneries to prevent mixing which, sooner or later, is going to touch the ginneries and ryots in their pockets.

5552 Exotic cottons have been failures in Madras. If the Agricultural Department can do so, they should confine their labours to the improvement of the indigenous cottons. They cannot do anything by trying varieties from another province or from another country. The Agricultural Department should control the distribution of seed if it can be done but it would require an enormous staff and an enormous amount of money as it would mean not giving back the seed to the dealer and the ryot but buying it up and sterilizing it. We actually discussed the question in 1911 with Mr. Chadwick, who was then the Director of Agriculture and with Sir Harold Stuart as a means of stopping *pulichai*. Of course the south is only a very small cotton growing district but, if you work out the value of seed that would have to be purchased to produce 150,000 bales of cotton, it means a tremendous lot of money. The Government of India would shy at it, the Government of Madras shied at it in the case of the Tinnevely district. If the Agricultural Department have an improved strain which is going to give the ryots a better yield of *lagas* to the acre than they are getting a better price, then as soon as that is successfully proved to the ryot, it does not take him long to get on to it. Take the case of *larunganni*. The production this year is 20,000 to 30,000 bales and it is only the third year.

5553 I see no harm in the levy of a small export duty but I would suggest it on the whole crop. If ginneries are licensed, there is no reason why you should not collect it there or at the presses. Of course, a certain amount is bound to escape, e.g., the cotton that was handginned and used for local consumption but I presume that it would be a comparatively small percentage of the whole crop.

5554 (Mr. Hodgkinson.) We sent some *larunganni* cotton last year to Liverpool. I think it was 1,500 to 2,000 bales. We had no complaints whatever. We asked specially for reports about it and two spinners said they would like as much of it as they could get. The blow room loss is about five to eight per cent. We do not deal with *larunganni* as we do with Northern and Westerns. It is grown in the south and so is picked early and brought in to us to be ginned in our own ginning factories. It is grown in the south. We knock about six per cent out of Westerns and Northern with a better. Our engineer, Mr. Middleton, devised the machines and started them running in the Western districts. The great difficulty was the pace at which to turn them and it took two seasons to find that out.

5555 The strength test of roller ginned cotton is better than that of saw ginned. We are going to try saw gins on Western cotton at Bellary and to have some comparative tests made with it. The trouble with the saw gin is that it loses more lint in the ginning. I noticed that personally when the saw gins were tried in our factories three or four years ago. The seed obviously had more lint left on it after it had been through the saw gin than after it had been through the roller gin. An appreciable quantity was taken off by the roller gin after it had been through the saw gin.

5556 We buy cotton from dealers sometimes a month or two ahead. We sell on type and we endeavour to stick to our types from one year to another. I am quite prepared to sell the lower types forward but I would not sell much of my best types forward because if the crop were damaged, I should not get much of them. We do not get any premium for tendering a better than the contract type on the present contract. If the cotton coming in turned out to be better than the types, I should not ordinarily deliver it. I should sell the superior stuff on the spot on its merits and, if possible, would later on tender the required type against the contract. I have frequently had to fill up with better cotton against a contract.

5557 I am in favour of a mutual allowance clause on the lines of the Bremen contract with a premium for higher grade and an allowance for lower grade types. I do not know whether we should approve of official arbitrators but want the style of arbitration changed. Before the war, it was universally recognized that the Bremen system of arbitration was the fairest. I think that contracts on Bremen lines would tend to secure the export of cleaner cotton and would probably make Indian cotton more attractive to Liverpool. The Bremen arbitration system should be introduced into Bombay and Liverpool.

5558 The Madras market is not big enough for futures. I cover with American futures in my own business sometimes but it is not a strict cover. It is an advantage to be able to do so with a small crop like ours which, I suppose, does not average more than 400,000 bales. We very often want to sell and find that there is no one to buy. We can always sell futures in Liverpool market and usually Broach in the Bombay market. Neither Broach nor American is a satisfactory cover for south Indian cotton but I do not see that you can get any more satisfactory cover. The market down here is certainly not wide enough to allow for free dealings in future.

5559 (Mr. Roberts.) When I sell cotton at home, I sell on the East Indian contract at Liverpool. I do sell sometimes on the home guarantee contract under which the allowance is merely against the seller. It is a one sided contract. I do not know whether the home guarantee contract tends to reduce the quality of the Indian cotton but, in a general way, I should say it did. As far as we are concerned, I would not ship anything to Liverpool unless I was quite certain that it was pretty good and saleable. I do ship cotton to Italy but very little. We have only sent one lot there since the war broke out and in that case we sold it free on board, the Italian Government providing the freight.

5560 The rise in price has brought about new conditions. Everybody has begun to buy earlier than usual and we are now faced with cotton which has been bought on paper and will not be delivered for another month. We bought at Rs. 300 to 320 per Madras *handi*. It is now worth about Rs. 450. Whether we are

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Mr. B. McL. MIDDLETON.

going to get delivery of it remains to be seen. I dislike this forward business up country because it is very much a case of "Heads I win, tails you lose." The quality will probably be low. It is in the interests of the dealer to minimize his loss of profit by making the quality as low as possible so that forward buying up-country tends to deteriorate the quality of the cotton. Some of the dealers bring in inferior stuff and mix it with the superior stuff to attain this end. Whether we buy Tinnevelles or Cambodia forward depends upon our views of the market. The position is the same as in the case of Westerns and Northern. Forward buying is not worse in these parts of the Northern tract in which we are principally interested, i.e., round Prodattur than it is in the south. I do not see how forward buying up country could be checked. I have no experience of the Bombay or Berar system but I agree that the best system of selling cotton is to sell it ready as *Jays* in open markets.

5561. *Karunganni* is absolutely free from *pulichai* this year. Cambodia fetched a very high price last year as it was bought not only by the Bombay mills but dealers bought it very largely for shipment to Liverpool. The cultivators are growing a great deal more of it this year. I cannot say whether the quality has varied very much. I have had no complaints that Cambodia is any worse than it was five or ten years ago. But I know that some of the mills we tried to interest in it stated that it was fine long staple cotton, but weak. I have dealt with it for seven or eight years.

5562. I have no experience of the cottons introduced in the Northern and Western tract by the Agricultural Department, i.e., Sircar No. 1 and No. 2 beyond small farm lots that the Department sent to the various mills for testing purposes; amongst others it was sent to our mills at Sholapur. We do not buy at Nandyal.

5563. We used the saw gin once or twice but it always came back to the same question. The dealers refused to have their cotton ginned in it. I bought it with the idea of using it in the Cambodia tract. It was erected at Dindigul but it has now been moved up to Bellary as the reports from the Buckingham and Carnatic Mills showed that they were not going to pay us higher prices for saw ginned cotton. We are now going to try it on Western cottons to see whether it will have any effect in making that cotton cleaner. The extra premium necessary to make saw ginned cotton pay should be about ten per cent. owing to the smaller outturn of lint as compared to roller ginned cotton.

Mr. B. McL. MIDDLETON, Chief Agent, Bombay Co., Ltd., Tuticorin.

EXAMINED AT TUTICORIN, MARCH 11TH, 1918.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

5564. (1, 10 and 20) Experience.—My experience in the cotton trade has been gained during twelve years chiefly spent in the Tinnevely District, and to a small extent in the districts growing Westerns and Northern classes of cotton, but I propose to confine my replies to the Tinnevely District, as others of greater experience will be giving information concerning the other districts.

5565. (2, 11 and 21) Varieties.—The different classes of cotton grown in the Tinnevely District consist of the fairly short staple *deshi* cottons known as *uppm* and *karunganni*, the long staple cotton grown from selected strains of *karunganni* cotton seed developed by the Agricultural Department and the exotic cotton known as Cambodia.

5566. Recent deterioration in exotic cotton.—To deal first with the subject of exotic cotton: when first introduced and carefully grown on suitable soil, a very good class of cotton was produced, but as the area under cultivation extended, with no attention paid to seed selection, the quality, in the last three years particularly, has shewn so great a deterioration that its introduction into the district is a very doubtful boon. By far the greatest majority of the arrivals that come in are scrappy cotton full of deep red stain. It is only grown successfully on red soil, with neither more nor less irrigation than the correct amount—which is a good wetting once a fortnight, and it very rarely receives this treatment. The cotton grown under tanks is generally over-watered and fails, and the crop attempted upon plain unirrigated black cotton soil also fails, and it is only under very exceptional conditions of rainfall that the latter crop can ever be a success. To be really successful, this crop has to be grown as a garden crop with well irrigation, and all the best crops I have seen have been cultivated in this way. It is doubtful, however, whether the land under these conditions could not be employed in growing more useful crops, and cotton confined to the large areas of suitable unirrigated soils that are available for the cultivation of improved strains of indigenous cotton.

5567. (28) Importation of seed.—As regards the question of importing fresh strains of seed from America, such seed is very likely to add to the spread of disease, as even acclimatized seed is more vulnerable to the attacks of insect pests than indigenous seed.

5568. Improvement in exotic cotton by seed selection.—Undoubtedly, there would be an improvement in the quality of the exotic cotton grown if the ryots were to practise even such a simple form of seed selection as sifting the seed before sowing, and, doubtless, if the matter were taken up on a large scale by the Agricultural Department and selected seed in ample quantities were available for the ryots, there would be a great all-round improvement in the quality of the arrivals, as ryots, although not bothering to attempt any form of seed selection, are quite keen on availing themselves of selected seed, if they can get anyone else to undertake the work. It is my opinion, however, that the Department, as at present constituted, are doing much more valuable work in improving the indigenous strain, and that only after perfection (which is a large order) has been arrived at in the growth of indigenous cottons can their attention be turned to exotic introductions.

5569. Success of the improved strains of *karunganni*.—As regards *karunganni* cotton, this has been grown for very many years in the district; in fact, it is said by the ryots that it was the sole original cotton grown in the district, and that the other variety of *deshi* cotton, known as *uppm*, was introduced about sixty years ago from the north and ousted *karunganni* in certain tracts, as it was found to stand better in bad season s

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(2) Since the question of selected seed has been taken up, the strain introduced by the Agricultural Department has been keenly bought up by the ryots, and the quantity grown is only dependent upon the quantity of seed available. The prices obtained by the improved cotton have been higher than Cambodia, the yield has been greater, and the ryots find that its growth pays them in nearly every case. Cambodia, grown under the most favourable conditions, still remains the most profitable cotton crop, but on land of only average quality this is no longer the case. The proportion of lint to seed, whilst Cambodia still leads, is better in the improved strains than in the ordinary unselected growths of Tinny cotton. The figures for last year were (per *polhi* of 346 lbs):—Tinny 6, *karunganni* 5½, Cambodia 4½ *polhis* to produce one *khandi* of 500 lbs. of lint; but the extra outturn shown by Cambodia is set off by the fact that the value of the seed is exactly one-half that of the *karunganni* or *upnam* seed, as it is said to be of fifty per cent. less value as cattle food.

(3) In fact, in my opinion, the success of the introduction of the improved strains of *karunganni* has been so great, both from the point of view of the growers and buyers, that it is a pity, owing to the very small establishment of the Department, further progress must inevitably be slow. There is also a risk that, as the growth of the improved strains becomes more general, the seed will gradually, through careless treatment, again deteriorate; and this will inevitably be the case, unless there are a sufficient number of both European and also native subordinates touring the district, keeping the advantages of careful growth and selection before the ryots, until in course of time the care of seed for sowing becomes automatic, and the haphazard methods of centuries replaced.

(4) In addition to extending the cultivation of the improved strains already introduced, I understand that the Department are by no means satisfied that they have reached finality, and further exhaustive research extending over many years, will be necessary before it may be considered that there are no further possibilities.

5570. *Desirabilities of work on upnam cotton.*—Also, I consider, it is of great importance that, in addition to further and prolonged investigation in *karunganni* cotton, the Department should endeavour to produce an improved strain of the other class of indigenous cotton known as *upnam*. I have constantly expressed this opinion to members of the Department, but have always met by the statement that this would necessitate opening an entirely new farm, and that this was impossible as they were too short-handed. *Karunganni* was chosen for the first trials, not because it was an inherently superior cotton, but because for botanical reasons it was an easier cotton with which to obtain results in seed selection. This reason was undoubtedly sound at the time, as good results could be obtained more quickly, but the principle of the advantage of cultivating improved strains having been definitely established, no further time should be lost in so increasing the personnel of the Department as to enable different forms of investigation to be conducted simultaneously.

(2) My reason for desiring experimental work to be conducted in *upnam* cotton is that a certain amount of ground has been lost through *karunganni* strains having been pushed in districts where its cultivation was not a success. Whether it is a scientific fact or not, the growers are universally of the opinion that *karunganni* will only grow well in certain tracts: they state that it requires sea breeze to aid in its development, and also that it does not do well on the heavier class of black cotton soil. If grown outside the normal tracts, it will only do well in favourable seasons and will produce no crop in bad seasons whereas the rival *upnam*, however small the rainfall may be, will always produce sufficient crop to "keep the wolf from the door."

(3) I have been asked on numberless occasions, when the Department are going to sell improved *upnam* seed, and if only this is undertaken, and improved or even only selected seed rendered available, then the whole of the cotton area in this district will be under control, to the immense advantage of all concerned in the welfare of cotton.

(4) The best grades of *upnam* form a very valuable cotton, being fairly long in staple and of a very white colour, much whiter in fact than *karunganni*, but not so silky. This white cotton is very much sought after by spinners, and if the staple can be improved, will be a very valuable alternative crop for the use of those ryots who consider (whether erroneously or not) that their land is not suitable for the cultivation of *karunganni*.

(5) The best *upnam* cotton grown comes from a village called Pothirediappatti, about five miles from Sattur, and the seed from this village always fetches a very high price, and is entirely used for sowing purposes. I should suggest this neighbourhood as suitable for a supplementary experimental farm, in addition to the farm at Koilpatti.

(6) The ryots state that the line which divides the *karunganni* tract from the *upnam* is roughly that of the railway, the eastern side suiting *karunganni* and the western *upnam*. Experts in agriculture may differ over this question, and the statement of the ryots may be merely prejudice but it is so deeply ingrained that any attempt to fight it will only discredit the useful work that is being otherwise done, and in the interests of all, an attempt at the production of pure strains of *upnam* cotton appears to me to be of paramount importance.

5571. (17 and 27) *Prevention of mixing of different varieties.*—As regards this question, this does not affect this district to any extent, as far as the mixing of exotic cotton and indigenous is concerned. There is occasionally a small percentage of Tinny seed mixed in with Cambodia, but this is not intentional, and is only due to careless seed selection: nor is the mixing of the *kaps* or lint known, as such admixture is too easily detected and penalized.

(2) As regards the mixing of Tinny seed with other seeds, the noxious introduction christened *pulichai* need no longer be considered, as it has been entirely stamped out, thanks to the efforts of the Agricultural Department in co-operation with buyers.

(3) Concerning the mixing of different classes of Tinny seed, viz., *upnam* and *karunganni* nearly all the seed sown is more or less of an admixture, except as regards the improved strains of the latter, and as far as my own firm is concerned, in order to help in keeping this pure, if *upnam* seed is found to be admixed with *karunganni*, the dealer is allowed according to the proportion of admixture found on counting the seed after ginning. If more than a certain proportion of *upnam* seed is found, the cotton is not accepted against contracts made for the delivery of farm strain *karunganni*, and thus the extra sums paid on the pure cotton are lost to the dealer, and it is, therefore, strongly in his interest that only the pure strains, without any admixtures should be sown. Fortunately, there is a clear and marked difference between the appearance of the two seeds, so that mixtures can be readily detected.

(4) If a pure strain *upnam* were on sale as well as a pure strain *karunganni*, the sowing of the old mixed seed would entirely die out, and the rapid popularity of the *karunganni* makes me very optimistic as to the future of entirely pure strains throughout the district, but this would necessitate much enlarged scope on the part of the Agricultural Department.

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5572. (18) *Uses of seed and seed selection.*—Except the seed reserved for sowing, which is not specially hand-picked, all seed is used for cattle food, and none used for oil production or exported. The value of *Uppan* and *Terrigani* seed is about the same when considered as cattle food, but Cambodia only half the value of the Tunny seed, as it is not supposed to have so great a food value for the cattle.

(19) The question of specially hand-picked seed for sowing need not be considered, as if *Japas* is well planted in double roller gun, the seed is quite undamaged for sowing purposes, and only receives damage when the gun is not fully adjusted. Single gun are more liable to damage the seed.

II.—COMMERCIAL ASPECT.

5573. (20) *Local trade customs.*—The local trade customs which govern transactions between exporters and growers are as follows. Business is done through the medium of brokers under two different systems:

(a) The exporter makes a contract with a dealer for lint, and in order to deliver against such contract buys in a *pettah* or market through a *thoragari* or commission agent, who negotiates the transaction with the ryots who have brought the *Japas* into the market in carts and have stored it there until the sale is effected. The dealer, having obtained the *Japas*, delivers it into the compound of the firm buyer, who on the *Japas* on his behalf at a fixed charge, the seed being retained by the dealer and the lot being taken against the contract made.

(b) The exporter makes a contract with a dealer for lint, and in order to deliver against such contract, the dealer buys lint from sub-dealers, who cover the ryots in the villages, making sub-contracts, or more usually paid over, outright to most of the growers. The ryot then delivers *Japas* direct to the factory on the sub-dealer's account, which in turn is taken in the firm's books as lint delivered by the dealer against contracts. The *Japas* is ginned by the firm in the extra way as in (a) and a fixed charge made, the seed remaining the property of the sub-dealer.

(2) The latter system, which latter style is becoming more prevalent, is by far the best, as the ryot delivers direct to the purchaser, and the *Japas* never enters the *pettah* or market. It is in these *pettahs* that all the rascals and scoundrels of the *Japas* take place, which has such a serious influence on the average quality of the *Japas*. The rascals do not bring different grades of cotton, but of damaged, stained and inferior cotton with good qualities to make up an average mixture, which will just be accepted by the firm purchasing and so the reputation of the country is lowered. Such trading is very deleterious to the cotton trade, as it is far better for good cotton to be marketed separately, and inferior cotton to be classified and sold as an inferior grade. Practically no *Japas* ever comes out of these *pettahs* without having suffered from manipulation, and it is entirely to be deplored. There is, however, a tendency for this matter to rectify itself, as the purchasing firms avoid, as far as possible, making contracts with dealers who fulfil their contracts by the method of purchasing in *pettahs*.

(3) It has been suggested among buyers that Government should interfere in the matter of watering the *Japas*, which has become a serious nuisance in this district, particularly at the commencement of every season; but it is difficult to see how this could be done, as the growers would always have an excuse ready that would be difficult to disprove, viz. that the cotton had not been watered by intention, but had been damped by rainfall and dew, when long packed and carted. The buyers have the remedy in their own hands by refusing to accept damped stuff, but unfortunately the continually increasing competition among buyers, particularly at the commencement of the season when arrivals are scarce, makes joint combination over a matter like this too utopian to be of any practical utility in stopping the practice.

(4) The suggestion of having inspectors to watch the *pettahs* does not appear to be practicable, as unless there were thoroughly reliable men, and exting a high rate of pay, they would merely be a thorn in the side of the *pettah* users and a means of extortion, without in any way modifying the situation as regards the damping, nor does it appear to me that any system of licensing the *pettah* owners would serve any useful purpose on account of similar reason.

(5) A further system is under trial, that of co-operative societies, in which a certain number of ryots join together, pool their stocks of *Japas* and send them in for sale direct to the firms without the use of intermediary dealers or commission agents. Whether or not this will ultimately oust the present system is dubious, the difficulty being at present that the president or leading man in the society is usually entirely unversed in trade customs, and does not understand the ordinary routine of business, such as allowancing for inferior quality, etc. This will improve with experience, but there is a latent possibility that, when such experience has been gained, the leading spirits in the societies will blossom forth as dealers, and use the knowledge they have acquired for their own personal ends, and not for the benefit of the other members of their unions.

5574. (31) *Standardization of commercial names.*—I do not consider that there is any advantage to be gained by attempts to standardize the classes under which cotton is to be sold. This appears to me to be a retrograde step, as it is a return to the system under which the cotton in this district was sold up to a few years ago, when it was sold (as is still the case in America) in recognized classifications, which were standardised in Liverpool. It was at the request of our buyers that my firm altered the system and now sell upon our standard types. Having ginning factories and presses at all the cotton centres throughout the Tinnevely District, we prefer to keep the classification separate of the cotton at each of such centres, as we find that some buyers prefer cotton from one centre and some from another—minute differences which suit the buyers, but which would not appear in any system of general classification. The latter would only be firms with few presses, who buy at all the centres but only press at one, mixing up all grades to an average. I believe that there is a desire on the part of some firms in the district to establish standards upon which all cotton would have to be graded and to have the same standards for all firms to work to, and to be known by the same names. I cannot see what would be gained by this, and it would only encourage and put a premium upon the mixing of the lint from all the districts into a common, mean average of quality, to bring inferior grades up to the fixed standards. The present system of each firm establishing standards to suit the localities of their factories, and giving samples of these standards to buyers upon which their deliveries are to be judged cannot be fairer either from the point of view of the seller or the buyer.

III.—STATISTICAL.

5575. (33 and 34) *Improvement of statistical information.*—Statistics, which depend upon a very large number of subordinate Government officials, tahsildars and village headmen for their accuracy

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cannot ever be of much service, as when sending in the returns there is too much temptation to turn up the report of last year, and submit that with suitable modification. The only way of improving upon the accuracy of the forecast is to delay publication until the cotton season is over.

5576. (35) Publication of Liverpool and Bombay prices.—I do not see that there would be any gain in publishing the Liverpool and Bombay cotton prices in our up-country markets, as the dealers all have their daily wires from Bombay and Reuter's so that the markets are known, without official information being required.

IV.—MANUFACTURE.

(a) Ginning and pressing.

5577. (36) Type and number of gins and presses.—We have in this district alone, in various factories, 175 cotton gins of the type known as Platt's doubt-roller gins, the cotton from which is pressed in four presses of Fawcett Preston's, Cummin's and Nasmyth Wilson's types situated at the various cotton centres. These presses will compress the bale to a density of forty cubic feet to the ton if required.

5578. (38) Saw gins *versus* roller gins.—For experimental purposes, I obtained a saw gin of American make, consisting of seventy ten inch saws, and tried a series of experiments as to the possibility of its use for the woolly-seeded types of Indian grown cotton. It was found that spinning tests of such cotton showed that the staple had been damaged, and it was also neppy, losses all round were greater and the strength of the yarn less. Comparative tests in spinning of duplicate samples of Cambodia *kapas* showed differences as follows between saw and roller-ginned lint

	Blow loss	Card loss	Strength for full 19s counts.
	per cent.	per cent.	lbs.
Roller-ginned	7.4	6.5	85.75
Saw " 	9.4	8.2	83.25

In addition to this, there was a very heavy wastage in ginning due to the fact that the seed was not ginned nearly as closely as can be done with the roller gin. This loss amounted to four per cent. as a minimum, and this alone is sufficient to put the question of unsuitability out of doubt. If used carefully for clean-seeded classes of cotton, and the gins run at a slow speed, they might prove successful, but this has yet to be proved.

5579. (40) Factory labour.—Sufficient labour is still available in this district, but, of course, at rates that have been much enhanced in recent years.

5580. *Single roller versus double roller gins.*—The double-roller gins in use in this district will, if properly set, gin cotton with any length of staple, and the longer the staple the better the outturn. The theory that single gins must be used for long staple cotton is quite exploded, and, in my opinion, the double gin is in every way superior. It damages the cotton less, requires less attention to keep in order and less skill in setting. As far as we are concerned, all the single-roller gins that we used to run have been thrown out and replaced with double-roller gins, and the same has been the case with other firms in the district.

5581. *Spread of small ginning factories.*—The ginning by all the firms in this district is very well done and the factories could be used as a model by any other district that I have seen. Recently, however, this reputation has not been kept up, as a large number of small native owned ginning factories have sprung up in the villages, consisting of from two to six gins which do not get the requisite expert supervision and in which consequently the cotton is damaged. This development is not beneficial because there are already erected in this district sufficient gins under European supervision to deal with the whole crop, and it is a question whether some system of Government supervision or licensing of factories could not be introduced to advantage. These small factories in themselves can rarely be made to pay and the reason why they are erected is that the ownership of a factory gives local *kudos* to the owner, for which he is prepared to be out of pocket.

(2) The danger of this extending is exemplified in the district in which Westerns is grown, where practically all the cotton is ginned in native owned factories and its value depreciated by bad ginning.

(3) The ginning factories are not only deplorably badly designed and erected, but also the owners will not go to the necessary capital cost to fit their gins with leather rollers, but use compressed newspaper rollers as a substitute, which material is inferior in every way, and inevitably leads to a reduction of the class and cleanliness of the product.

5582. *Ginning charges.*—The amount charged by the firms to the dealers for the ginning of the *kapas*, that they bring in, is very low, being only in most cases Rs. 4 per *khandi* of lint produced. This is less than in any other part of India with which I am acquainted.

V.—GENERAL.

5583. (46) Attitude of buyers to improved cottons.—Buyers in this district have offered and are prepared to offer very good premia for improved classes of cotton as has been demonstrated by the prices that have ruled for the improved strains of *karunganni* ever since they were placed upon the market. This will, I think, be confirmed by the Agricultural Department, who were, I believe, fully satisfied with the premia that have been paid for the lint of the improved strains which they introduced.

5584. *Possibility of development in the Tinnevely tract.*—In conclusion, I would point out that while there is not much possibility of increasing the area under cotton cultivation in this district, there is no district which offers more fertile opportunities for development on the part of the Government. The ryots are above the average in intelligence, commercial arrangements are such that the ryot gets a very good percentage of the value of his product, the ginning and marketing is in the hands of old established firms upon whom the Agricultural Department can rely for all possible assistance and, in general, the conditions are such that of all the cotton-growing districts this forms an ideal place in which the effect of more intensive plant culture can be demonstrated.

5585. *Conclusion.*—I should like to add that the opinions expressed in this effort are entirely personal and must not be considered as the opinions that are held by the firm of which I am a representative.

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[Continued.]

Mr. B. McL. MIDDLETON called and examined.

5586. (President.) Most of my experience of the cotton business has been in the Tinnevely tract but I have had a certain amount of experience of Westerns. I am not over enthusiastic about exotics like Cambodia because the crop cannot be increased to any great extent as there is not sufficient correct soil for it. Correct soil is an important limitation and therefore, I think that the energies which have been devoted to Cambodia might be more profitably devoted to pushing indigenous cottons on a large scale. Cambodia is getting a big crop but as a constant policy I would personally prefer the other. I think that if the work of the Agricultural Department goes on, Company cottons might displace Cambodia to a certain extent. It is easier to grow a good crop of *karunganni* than it is to grow a good crop of Cambodia. On their respective merits, *karunganni* should oust Cambodia later on to a very great extent on account of its greater security provided that the present outturn and ginning percentage are kept up. Speaking as a cotton merchant, the highest grade of Cambodia is better than *karunganni* but that does not exist except in a small quantity. One might be able to get about 500 bales of it a year in the Tinnevely circle but not more.

5587. I would like further work done on *uprams*. I should say that *karunganni* also has limitations in regard to tracts, it is a much more delicate plant than *upram*. In a very dry year, *karunganni* suffers.

5588. I think that a very careful survey of soil limitations should be carried out by the Agricultural Department. I have seen a good deal of the work of the Agricultural Department and I am in very close touch with it. I consider that the Department requires considerable expansion both as regards superior and subordinate staff—especially of the former. The number of seed farms and also of experimental farms should be largely increased.

5589. As far as we are concerned, the crop statistics are of no use to us at all. The figures are based on the areas sown but that is only one factor; there are many other factors which govern the situation. A forecast of the rainfall would be much more valuable than a forecast of the crop. I do not think that there is any method of improving the forecast which would make it of any value. Our firm does not take the slightest notice of it. I have never heard of any scramble for it. The crop is purely and simply a question of rainfall; it is the rainfall which governs the situation; you want proper rain at the proper time. No statistics can give you that, unfortunately.

5590. I think that pure strains of *upram* and *karunganni* could be kept separate and distinct as the ginning is in our own hands and the difference between the seeds of the two varieties is very marked so that matters could be controlled without difficulty.

5591. We are prepared to pay more for pure cotton. A good deal of cotton in this tract is marked on the certificate of the Agricultural Department and we buy as much of it as we can.

5592. (Mr. Wadia.) It is difficult to say whether there has been any great deterioration in Cambodia lately. My personal opinion is that there has been no inherent deterioration but that the commercial crop has deteriorated because there has been an extension of this variety to unsuitable soils such as unirrigated black soils. On such soils there is bound to be a deterioration in quality. Seed selection is required but it is also necessary that attention should be paid to controlling the soil on which cotton is grown. If Cambodia is kept as a garden crop on red soils and is well irrigated, it can be brought back to its original standard. If it is grown on bad soils, insects attack it. The whole struggle with Cambodia is to get it free from stain, as criticism is apt to be based upon colour rather than upon the quality of the cotton. Over irrigation makes Cambodia stained. It does not require irrigation but what it wants is watering. There is considerable difference between the two. Cambodia should be persisted with provided it is kept to suitable soils. As soon as you try to expand the crop and begin growing it on unsuitable soils, you get bad stuff. The selected strains of *karunganni* given out by the Agricultural Department are fetching higher prices than Cambodia. They are shorter in staple but they are of much better colour and are more even in staple. As to whether these strains give a higher yield than Cambodia, it is a question of soil. On suitable soils, Cambodia gives a higher yield per acre and higher ginning percentage than *karunganni*. On such soils Cambodia is the best crop that can be grown but they are limited in comparison with the total area of land available for cotton cultivation. Cambodia should be confined to the red soil tracts in Coimbatore and possibly round Dindigul and in Trichinopoly.

5593. I would suggest that improved strains of *upram* should be given out by the Agricultural Department. They have made no efforts at all in that direction. *Upam* is whiter in colour and shorter in staple than *karunganni*—about eighth of an inch shorter in staple but whether seed selection would improve the strain I am not prepared to say. When Mr. Chadwick was Director of Agriculture, he stated that seed selection work on *upram* would mean the opening of an entirely new farm. If the staff of the Agricultural Department is increased, this ought to be the first step. It has been suggested that a suitable place for such a farm would be in the neighbourhood north of Sattur or near Virudupatti. I have not gone deeply into the question but good seed can be obtained on these tracts.

5594. Cambodia and Tinnevelles are not grown mixed on any extensive scale. There are occasionally a few plants of Tinnies growing in Cambodia and *vice versa* but it is not intentional. There may be some slight admixture in the ordinary seed unless it is carefully separated. Practically all the seed sown comes from the gineries. Seed is not specially hand-ginned for sowing now a days. There is no mixing in the gineries here, because the *kapas* is the property of the dealers until after it has been ginned. If the *kapas* of one dealer were mixed with that of another, there would be trouble. The gineries gain nothing by mixing. If seed is well ginned by machinery, it is just as good as hand-ginned seed.

5595. I have stated in my written evidence that there is deliberate adulteration and watering of *kapas* in the *pettahs*. There are all sorts of systems. One method is to stack the cotton on the top of rows of wet bricks. The cotton sucks up the moisture from the bricks and the cotton itself is not deliberately watered. Another method is to make a hole in the middle of the bundle of cotton and to pour in a *chatty* full of water. That is the primitive method and the more general one. Then if a man has got a quantity of damaged or inferior cotton he wants to get rid of, he will try to doctor it up and make it pass as something. The only remedy is for purchasing firms to refuse to buy such cotton. I cannot think of any other solution of the problem.

5596. I have heard of cotton being mixed in the presses. That is not, as a rule, a deliberate mixture of different classes of cotton. It is an attempt to get cotton of the standard on which firms like mine sell, i.e., to make the requisite types. The price of waste at the Koilpatti mills is very high. I have seen waste coming in for purposes of mixing. It is usually mixed with hand-ginned cotton and not with machine-ginned cotton.

5597. The pressing factories never damp cotton, they always try to get it dry. It is very much against

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[Continued.]

their interests to press damp cotton. Pressing damp cotton means less pressure on the pump but it has a fatal effect upon the cotton after it is pressed. I entirely differ from the view that it improves the staple. It makes the cotton matty.

5598. There is no mixing of short and long staple cotton here. *Pulichai* was an exceptional case. As far as we are concerned we find it pays a good deal in every way to deal in pure cotton as far as possible. It is more satisfactory instead of mixing to sell different grades. I think that a system of licensing ginneries and of withdrawal of licence for deliberate mixing is rather a Utopian idea and I do not see how any scheme could be worked out to give effect to it. The only remedy lies in the hands of the buyers. If they are prepared to pay better prices, they can get good cotton. There are plenty of firms to select from. I would only recommend the licensing of factories to ensure the proper setting and maintenance of the gins and for no other reason.

5599. We regard our ginning factories as a means to an end and not an end in themselves and therefore as long as they pay their way we do not bother about profits. If people gin on commission as they do in other parts of India, I should consider Rs. 6 per *Mandi* (of 500 lbs) of lint as a reasonable charge. That would make a factory pay. If anybody charges as much as Rs. 12 they are simply out to get money. If a factory is badly managed and there is not proper supervision ginning cannot be done at Rs. 6 a *Mandi*. High charges for ginning and pressing eventually come out of the cultivators' pockets. The difficulty about any attempt to regulate prices is the possibility of a rebate being given, i.e., of underhand charges. On paper the charge might be Rs. 4 a *Mandi* but actually Rs. 10 per *Mandi* would be paid. A man would refuse to gin at the Government price unless he were paid a premium underhand. That is the obvious thing that would happen and it would be very difficult to stop. The same thing happens where there are pressing pools. In order to get as much cotton to press as possible, people press at pool rates and give a second rebate. I do not see how you can stop that by law. The pools are a distinct disadvantage to the grower as the money comes out of his pocket. Anti-trust legislation on American lines seems the only means of checking them. I have not very much faith in co-operative societies for that purpose. A strong pool would be rather a difficult thing for a co-operative society to break.

5600. I am a firm believer in double roller gins. I prefer them for any class of cotton short staple as well as long. The reason why they prefer the single roller gin in the north is because India is a very conservative country. They started with single rollers and so they are going on with them. The double roller gin is easier to set and work and produces good cotton more easily. As regards production, the double roller gin gives about twice the quantity of the single roller gin. A badly set single roller gin can take as much power to drive as a double roller gin. Grooves in the rollers are not made intentionally but if stones get into the gin, they very soon make grooves in the rollers. If a man wants to put cut or crushed seed into ginned cotton there are simpler ways of doing so than by making grooves in the roller.

5601. (Mr. Holghinson.) I think there are areas which have not yet been tapped which are suitable for Cambodia. There is a new area in the Trichinopoly District which is growing Cambodia this year. I think there are possibilities of extending the cultivation of Cambodia in the Coimbatore District. I would certainly recommend the extension of Cambodia on suitable soil.

5602. I have stated in my written evidence that it was at the request of our buyers that my firm altered its procedure and now sells on its own standard type. That refers both to the export trade and to the mill trade. We sell on standard types which we prepare for ourselves. Irish types are made every year but we try to keep the types exactly the same from year to year. In bad years, this means that we sell lower types instead of altering the type. I sell on the standard types of the previous year until I can get new types out. I have had complaints from home and the Continent of cotton not being up to the standard type. I do not think that the complaints were justified in the majority of cases. I have shipped types superior to my standard types and on one occasion I did not to Bombay and was allowed for it. So I have not done it again. As regards the adoption of the Bremen arbitration "mutual allowance" clause, selling cotton is not my department. My own personal opinion is that it is obviously the fairest system there is but I have not had any actual experience of it.

5603. Getting clean cotton is merely a question of paying for it. If cotton were put through openers, it would mean cleaner cotton but a high price would have to be paid for it. We cannot ship home any stuff as clean as the Texas sample now shown me. The standard of Liverpool is so high that there is a risk of being allowed on all shipments to Liverpool.

5604. I am not in favour of saw gins at all. I think that if American cotton were roller ginned, it would be an improvement. I think it is purely the labour difficulty which keeps roller gins out of America.

5605. (Mr. Roberts.) The crop of Cambodia is something like 200,000 bales and that of Tinnevelly is 125,000 bales. Cambodia has to a certain extent taken the place of *Larunganni* and *upnam*—not the selected *Larunganni* but the original *karunganni*. Selected *karunganni* will in course of time oust a lot of Cambodia. Cambodia might be improved by selection. That is a matter for experiment. It is quite possible that the same results might be obtained with Cambodia, as have been obtained with *karunganni*. If the seed of Cambodia were sifted in a sieve, the small badly formed seed and also the seed of *karunganni* and *upnam* would fall through. It would make the cotton pure and they would get stronger seed but they won't do that. I have had experience of the new Government types Company No. 2 and No. 3. They are a very great improvement on *karunganni* of the last seven or eight years and are much more even and regular. I put the staple of the ordinary *Larunganni* at not more than $\frac{3}{4}$ ths inch and that of No. 3 as $\frac{7}{8}$ ths of an inch to 1 inch. Company 3—A is a very bright cotton with a nice colour. It is not possible to express an opinion as to the length of its staple until it comes in in sufficient quantities. As a matter of fact we have not found it necessary yet to have different types for different classes of *karunganni* grown by the Agricultural Department. I think the present premium of Rs. 16 for those classes is sufficient. I consider it full value. After all the premium is governed by competition; the greater the demand the higher the price. The extra Rs. 16 we pay as premium ensures our getting in as much as we can. The relative importance of *upnam* to *Larunganni* at present is about half and half but during the present season as *karunganni* has become popularized, practically no pure *upnam* cotton has been brought in, all has been either pure *karunganni* or a mixture of *Larunganni* and *upnam*. This is retrograde as only pure strains are wanted. Pure *karunganni* and pure *upnam* are both wanted by buyers—the mixed stuff is wanted by nobody. The *upnam* crop is more affected by Cambodia than by *karunganni* because Cambodia is grown on black soil on which *upnam* used to grow.

5606. In ginning Cambodia, we merely lengthen the stroke of the moving knives and we use larger grids, 5-16ths inch for Cambodia as against $\frac{1}{4}$ th inch for *upnam*. I do not consider platforms for double roller gins

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an advantage. The outturn of the double roller gin depends on the feeding of the gins to a great extent and that has to be done by hand; the coolies have to be continually turning the *kapas* over in the box to prevent the seed clogging the knives. Platforms round the gin make it much more difficult for the fitters to attend to the gin. There is not as much danger of mixing seed and lint as the result of using boxes instead of platforms as might be expected. There are possibilities of great improvement in the details of double roller gins. For instance, there are some parts of the gin which are supplied with the original gin which are never used in practice. The V. die is never used in this district. Then again the speeds are all wrong. We do not use Platt's speeds. The roller speed is too high and the beater speed is too low. I do not think that the roller should ever run faster than seventy revolutions in a minute whilst the beater can be run as fast as possible. Personally I run the beaters 850 revolutions in a minute. I have tried gins driven running to 1,200 revolutions. The rollers are seven inches in diameter. I believe in running the roller slow. The actual loss in lint in the saw gin is about 24 lbs in every 500 pounds of lint more than in the roller gin. The lint gets blown away from the gin and put in the condenser. There is a lot of the stuff which is made useless by the gin which chops up the staple. I made a whole series of tests lasting over a complete season. The cotton of this district is difficult to gin.

5607. I like the system of buying lint better than any other, i.e., the system under which the dealers bring in *kapas* to firms which gin on their account subsequently, as a rule, purchasing the lint from the dealer, who removes his own seed. In ginning we see the whole of the cotton and we have the whole process in our own hands.

5608. I have seen some Cambodia grown in Nandyal. It was very poor stuff.

Mr. T. R. KRISHNASWAMI AYYANGAR, Manager, Sri Chidambara Vinayakar Mills, Ltd.,
Koilpatti.

EXAMINED AT TUTICORIN, MARCH 11TH, 1918.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

(b) *Deshi long staple cotton.*

5609. (10) Experience.—I have not much experience in this line of business except that I have been in this district and in this mill only for a period of about nine months as manager. What little experience I have gained during this short period may not be of much value, specially before such an august commission as this, and yet I shall give as much information as I can, and offer my opinions in my humble way which may be taken for what they are worth. I have not been in actual touch with cotton cultivators except on occasions when they come to our mills to sell cotton. But I may say most of the cotton purchased for the mills is bought through the middlemen.

5610. (11) Varieties.—*Pulichai* can be called short staple cotton or no staple cotton in this district. It was not a native of this district, but somehow it got mixed with *Tinnevellies*. On account of the greater yield, it was liked by the ryots and cultivated along with *Tinnevellies*. Steps were taken to extinguish this kind of cotton, by the united action of the Agricultural Department and all the firms dealing in cotton by entering themselves into an agreement to reject such cotton and also to penalise purchasing or selling the same.

(2) There are three kinds of cotton grown in this district (1) *Tinnevellies*, (2) *Karunganni* and (3) *Cambodia* and all of them may be said to be long stapled. *Tinnevellies* are a mixture of *karunganni* and *upпам*, although the original *Tinny* is *karunganni* proper. This *upпам* was not a native of this district, but it became mixed with *karunganni* and the ryots preferred its cultivation as it is an early and even maturing variety with whiter colour and as the labour involved in picking this variety is comparatively less than *karunganni*. It found ready favour in the northern parts of the cotton tract, as the sowings there were earlier than in the southern parts, where *karunganni* still predominates. This is also due to the difference in climatic conditions between the north and the south. Even the original *karunganni* has been greatly improved in its strains by the efforts of the Agricultural Department. These are known as Company No. 3 and 2 and have almost replaced the original *karunganni* in this district and in the course of a few years there is every likelihood of there being no mixture of *upпам* at all.

5611. (12) Size of holdings.—In this district, about ten acres may be taken as the average black soil holding of a ryot. Usually the ryots set apart half of their lands for cotton cultivation.

5612. (13) Yields and profits and comparative returns.—The average yield per acre is $1\frac{1}{2}$ pothies of *kapas*, i.e., about 350 lbs. At the present high prices, the profits per acre will be about Rs. 60 for ordinary cotton and for improved strains such as No. 3 and 2, it will be Rs. 80 to 85.

5613. (14) Rotations and manures.—In alternate years, cotton is grown and in the intervening year, *kumbu* (*bajra*) and fodder *cholam* (*guar*). Generally sheep manure is applied.

5614. (16) Suitability of existing varieties.—In this district, the right varieties of long staple cotton of Company No. 2 and 3 of *karunganni* are being pushed and it might also be improved further by selection of seeds of this kind of cotton more minutely and by supply to ryots on a large scale. This is being done by the agricultural farm at Koilpatti on a small scale and steps should be taken to enlarge it.

5615. (17) Prevention of mixing of different varieties.—The mixture of other kinds of cotton can be prevented in the field, if free supply of seeds to the ryots be continued by the agricultural farm for two more years. If all the firms make it a point to greatly allowance the mixed cotton and also give premium to the pure variety, then this mixing will die out a natural death in a few years time as has been the case with *pulichai*.

5616. (18) Uses of seed and seed selection.—Generally the seeds from the season picking are used for sowing purposes and the balance therefrom and those from the summer picking for cattle food. Ryots do not generally make seed selections but select good *kapas* for seeds, and also purchase seeds from the Agricultural Department who are scientifically doing the selection of seeds. The popular belief among the ryots that only hand gleaned seed should be used for sowing purposes is now fast giving way and machine

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ginned seed is now commonly used for sowing purposes. If some gins are set apart specially for ginning seeds for sowing purposes only, and for no other, and if particular care be taken in ginning them, then alone hand ginning for sowing purposes will become unnecessary.

(c) *Exotic Cotton.*

5617. (21) *Varieties.*—Cambodia is the only exotic cotton in this district which is also popularly known as American cotton, although it is a misnomer to call it by that name. It is generally grown in places where there are facilities for irrigation. As an irrigated crop, about 750 lb. may be taken as the average crop per acre.

5618. (23) *Comparative returns.*—At the present price the profits per acre will be about Rs. 150. Compared with ordinary Tinny and *Larunganni*, this has got a longer and stronger staple.

5619. (26) *Suitability of existing varieties.*—Instead of encouraging the spread of this kind of exotic cotton or of any other kind, I would prefer improving the strains of *Larunganni* as the former can be grown only in certain localities under certain specific conditions, whereas *Larunganni* can be grown anywhere in the district in the ordinary black cotton soil. If at all exotic cotton is introduced, seeds selected from cotton grown in India should be used.

5620. *Condition of cotton.*—I find there is difference in the quality of cotton ginned in our factory and that brought from outside, the latter being leafy, dirty and also seed mixed. This, I think, is due, a little, to not taking particular care to keep the gins in a clean state. But it is mostly due to the cotton being ginned in small ginneries established in villages. They are badly constructed, they have no openers and they have no seed pits. These gins do not generally have trained or competent fitters and the owners cannot get such kind of persons as they are not permanently employed throughout the year and as their services are dispensed with as soon as the ginning season is over. The licensing of factories, the application of Factories Act to these ginneries and a prescribed standard of qualification for the gin fitters will, I think, remedy most of the defects pointed out above.

II.—COMMERCIAL ASPECT.

5621. (30) *Local trade customs.*—In our mills, we purchase cotton generally through dealers with whom contracts are entered into for delivery three or four weeks ahead. But this year the period has been much extended and contract has been done three or four months ahead. They bring *Lapas* to our ginning factory during the season time. After ginning, the lint is taken by us and the seeds returned to the dealers who sell the seeds on their own account. The ginning season generally commences in the latter part of February and lasts for six or seven months. Afterwards dealers bring machine ginned cotton and hand ginned cotton known as *churka*. The former is supposed to be free from seeds and the latter will have a certain proportion of seeds and so they are cleaned in cots and purchased. *Lapas* and cotton are being selected before being accepted. Advances are generally given to the dealers on *Lapas* or cotton brought into the mill compound and a final settlement is made after completion of contract.

5622. (31) *Standardization of commercial names.*—As already referred to by me, the commercial names of various grades of cotton in this district are Tinnevelly (*Larunganni* and *upjam* mixed); pure *Larunganni* (specialised by the agricultural firm as Company No. 2 and 3), and Cambodia. The former two mostly come from the southern parts of the district and the latter generally from the northern parts. I regard these names as suitable and no alteration is necessary. I do not advocate the standardization of names, as it would not last throughout and as the same cotton grown in different localities is likely to differ in quality and characteristics, and naturally new names will be invented to distinguish one from the other.

5623. (32) *Buying agencies.*—The best method would be to purchase ready cotton from the ryots directly. But as the system of purchasing through dealers has long been in vogue in this district and as the bargaining with the ryots will be troublesome, it would be better to purchase ready cotton in the open market. In my short experience, I find that this too is attended with difficulties, as all varieties of cotton are brought and mixed together in the market. Organized efforts should therefore be made to reject mixed cotton outright and the ryots, made to realize that good cotton, would eventually pay them better than any mixture.

III.—STATISTICAL.

5624. (35) *Publication of Liverpool and Bombay prices.*—Any forecast of cotton is not possible in India and as dealers and ryots get information of Liverpool and Bombay quotations and sometimes earlier than the firms or companies, daily publication of prices may not be necessary.

IV.—MANUFACTURE.

(a) *Ginning and pressing*

5625. (36) *Type and number of gins and presses.*—Double roller gins of Platt Brothers Maker, 20 in number, and one gin of four rollers are in use in our factory. There are no presses for cotton.

5626. (40) *Factory labour.*—There is not very much difficulty in obtaining ordinary labour except during the ploughing and harvesting season of other crops, when the operatives' absence is nearly one-sixth of the total number. In the matter of capable mechanics and fitters, slight difficulty is experienced.

5627. (41) *Condition of cotton.*—At the commencement of the season, the *Lapas* brought for ginning is sometimes wet and they are generally refused or redried. At the end of the season, *Lapas* of very inferior quality, probably those rejected during the season, is brought for ginning, which we only gin for hire and do not take the lint for our use in the mills.

(b) *Spinning and weaving.*

5628. (43) *Counts spun and market for yarn or cloth.*—No. 4s to 50s can be spun in our factory, but we generally spin only 20s, 22s, 24s, and 26s, as we have a great demand for them. Our principal market is Tinnevely and some other places in the district and also Kottar and other places in the Tanjore State.

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5629. (44) Condition of cotton.—Sometimes, the condition of cotton arriving in our factory is wretched, being a mixture of all varieties of cotton, inferior and superior and also of cotton waste and *koluku*. The remedy, I would suggest, is that all the firms dealing in cotton should form themselves into an organized body and try to penalise such mixture if a certain percentage is exceeded, just as was done in the case of the species of cotton known as *pulichai*, *jari* or *mailam*. To prevent its cultivation, growth and sale, an agreement known as the Tinnevely Cotton Improvement Agreement is entered into by almost all the cotton firms and the Director of Agriculture for the last three years. The effect of such an agreement was the extinction of the said *pulichai* cotton almost in all parts of this district and there are very little traces of the same now. In the same way, our desired effect may be achieved in the case of the mixture of cotton.

5630. (45) Effect on cotton market of replacement of short staple cotton by long staple.—The replacing of long staple cotton for short staple cotton at first may affect a little the cotton market by short supply, but, in the long run, it would have a salutary effect such as the lessening of labour, minimising waste of cotton, improved quality of yarn produced and of cloth woven therefrom.

Mr. T. A. KRISHNASWAMI AYYANGAR called and examined.

5631. (President.) I had no training in cotton at all before I took up the mill managership nine months ago. Till then I was a Government servant in the office of the Board of Revenue, Madras. We have a ginnery of our own. There is some mixture of cotton at the end of the season and I think it is intentional. What we reject at the beginning of the season is brought back to us at the end. We reject stained cotton and cotton affected by insects. Hand ginned cotton has almost disappeared because of the starting of ginning factories. The cultivators think that the machine ginned seed is quite as good as the other, and so they do not take the trouble to gin their own seed.

5632. I handle Cambodia, *karunganni* and Tinnevely cotton in my mill. Both Cambodia and *karunganni* are good cottons. We generally mix them with *uppam* for spinning purposes. From pure *karunganni* and pure Cambodia, we can spin 40s to 44s.

5633. There is a big market for cotton waste. I sold some yesterday for Rs. 230 a *khandi* of 500 pounds. I sold some a fortnight back at Rs. 180 per *khandi*. I sold it on condition that it should not be used near my mills. I think most of it goes to Pondicherry. The dealers tell me that they are sending it to Pondicherry.

5634. I am in favour of a ready market. It would be a better system than the present one, because the dealers at present buy all kinds of cotton which they mix and bring to us. Sometimes we find out that the cotton is mixed and sometimes not. This would be avoided if the cotton were bought ready. My firm would come into a combination to penalise mixtures. I think that the Tinnevely cotton improvement agreement is a very sound basis of business and that the smaller firms would join in such an agreement.

5635. (Mr. Hodgkinson.) We do not buy waste. In the latter part of the season, we find some waste in the cotton that is brought to us.

5636. We spin up to 50s. We can spin 50s. out of *karunganni* and Cambodia mixed in equal proportions.

5637. I buy *kapas* as well as lint. I make sales a week or fortnight ahead, sometimes a month or so but not more than that. We do not sell yarn as far as six or eight months ahead. Owing to the high prices of yarn, I make sales of yarn level and four months ahead at present. We sell only for cash and do not give credit or sell on contract.

5638. (Mr. Roberts.) I have bought Company No. 3. It is sometimes certified by the Farm Manager that it is the produce of farm seed. I pay a premium for it of Rs. 5 to Rs. 10. It is better than the ordinary *karunganni*. In point of colour Company No. 3 is better; in point of staple Company No. 2 is better.

Mr. A. ZOLLINGER, Agent, Messrs. Volkart Bros., Tuticorin.

EXAMINED AT TUTICORIN, MARCH 11TH, 1918.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

5639. Preamble.—My activities in cotton growing districts in India have been exclusively concerned with the buying of raw cotton (*kapas*, i.e., unginned cotton and ginned cotton) which, however, owing to the nature of the trade and its conditions, seldom leads to coming into actual touch with cultivators. "My agricultural experience" in India can therefore be considered as insignificant, but I am offering below a few remarks in reply to some of the questions based on more or less incidental observations.

(a) *Deshi short staple cotton.*

5640. (1) Experience.—I have been stationed at Amraoti, Berar, off and on for nine years, i.e., for nine cotton seasons of five to six months each time, from 1908 to 1916.

5641. (5) Rotations and manures.—In Berar, no regular cycle of rotations seem to have been followed until quite recently. Generally speaking, cotton and *juar* were grown alternately, but apparently irregularly, and very often cotton has been grown on the same field for consecutive years, in the latter case perhaps mixed with *tur* or mixed with *juar*. Since the last few years, the Agricultural Department, Central Provinces, has endeavoured—and I believe successfully—to induce cultivators to go in for regular rotation, mostly with *juar* and lately also with groundnuts. In a few tracts, wheat is also a rotation crop.

(2) Manure had seldom been applied in Berar—until again the Agricultural Department introduced artificial manure. I cannot say whether with any great measure of success.

5642. (7) Conditions affecting increase in area.—Fluctuations in area under cotton in Berar have during the above period always been within narrow limits as cotton takes up the largest part of arable land in the Berars and cultivation of food-grains and fodder is often reduced to the bare necessities of the

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province and at times of high cotton prices is even less than what the province requires. For this same reason any substantial increase in area under cotton is hardly possible and certainly not advisable on account of its influence on prices of food-grains and consequent economic conditions, chiefly of the poorer classes including labour.

5613. (8) Uses of seed and seed selection.—Cotton seed is largely exported from the Berars to—

- (a) other parts of India in times of crop failures and fodder famine elsewhere,
- (b) to Europe.

With high cotton prices, and cheap offers for seed by export—and in times of fodder scarcity, considerable quantities of cotton seed are taken up by cultivators for cattle fodder.

(2) Prior to the introduction of seed farms and seed unions, considerable quantities of hand ginned cotton were brought to the chief cotton markets in Berar, the seed of which was mostly used for sowing purposes; occasionally *Lapas* was offered for sale on condition that the seed be resold to the seller of the *lapas* after ginning, for sowing purposes, such *lapas* being ginned separately. The chief feature of such *lapas* appeared to be bulk (high percentage of lint)—a sign of good yield—as hand ginned cotton also was mostly of better bulk than most of the machine ginned cotton. Of late years (i.e., with the introduction of *roseum* cotton and seed unions connected therewith), arrivals of hand ginned cotton have decreased in Berar.

(b) "Deshi" long stapled cotton.

5644. (10) Experience.—My experiences in long stapled *deshi* cotton extend over irregular short periods only, viz:—

Guntur-Berwada	(Coconada)	4 months	(1909)
Coconada	(")	6 "	(1911)
Broach-Surat	(Broach)	2 "	(1914)
Coimbatore-Udamalpet . .	(Tinnevely-Uppam) . .	3 "	(1915)
Nandyal	(Northern)	3 "	(1916)
Tuticorin	(Tinnevely)	10 "	(1917-18)

5645. (14) Rotations and manures.—I have no knowledge of the rotations observed in the above districts but may remark here that nowhere else have I seen so extensive use of manure (top dressing) being made as in the Broach-Surat District.

5646. (15) Conditions affecting increase in area.—Of the above districts, Broach-Surat is least likely to bear with an increase in the cultivation of cotton, conditions being very much the same as prevailing in Berar.

(2) I should, however, imagine that cotton cultivation could be largely increased in the Coconada district (Guntur, Berwada, Warangal, Rajmundry, Tuni, Coconada) where to a certain extent irrigation is, or could be made available, ginning season offers no obstacle and labour supply is plentiful and cheaper than in the Central Provinces, for instance. Large tracts in the Coconada district might be more intensively cultivated than was the case in 1909 but perhaps an improvement has taken place in the meantime in this respect. Next in order as regards scope for increase of cotton cultivation I hold the "Northern" district (Nandyal, Proddatur, Kurnool), "Salem"—(Coimbatore-Tiruppur-Udamalpet), and "Tinnevely" district (Dindigul-Virudupatti-Tuticorin), but I shall refer to these districts again under "exotic cotton."

5647. (16) Suitability of existing varieties.—The success of the so-called "Company Cotton" introduced by the Agricultural Department, Madras, in the Tinnevely district, proves that a considerably better type of cotton can be grown in these parts; in the Northern district, the Agricultural Department made experiments with improved Northern strains which, however, appear not to have come to a close yet.

(2) Nor have I any doubt that, in Broach-Surat, the present Broach cotton which has very much deteriorated chiefly in length of staple could not be improved upon, chiefly by better seed-selection, but I do not know whether any efforts have been made in this direction.

5648. (17) Prevention of mixing of different varieties.—Malpractices in the mixing of better quality cotton with inferior styles are widespread in India and somewhat difficult to combat in certain districts. This problem has been satisfactorily solved by the Agricultural Department, Madras, with regard to so-called *pulichai* cotton in the Tinnevely district, and I venture to opine that the same measures might be applied probably with equal success, to the Northern and Coconada districts where inferior, short stapled cotton has been introduced by rail from Bengal and Ganjam (Tuni cotton) and mixed with the local types at the factories. The consequent mixing of seed leads, of course, to gradual deterioration of the better local types. The measures adopted in the Tinnevely district against *pulichai* are—

(a) examination of growing crops in the field by officers of the Agricultural Department and destruction of *pulichai* plants mixed with Tinnevely, the purchase of the whole yield by the Department of *pulichai* fields and destruction of respective seed,

(b) examination of Tinnevely cotton or the seed thereof at factories by factory-owners or buyers for admixtures of *pulichai* and rejection of admixtures exceeding two per cent. *pulichai* and heavy allowances imposed on sellers for admixtures of two per cent. or less.

This year, large tracts seem to have been sown in certain Tinnevely districts with Cambodias mixed with Tinnevelles, and careful supervision on the part of buyers at time of ginning will be necessary. But the use of such mixtures constitutes a danger to the purity of the Cambodia even if it is not purposely used for resewing, and from this standpoint alone, such practices should be made the subject of propaganda by the Agricultural Department.

(2) In the Broach-Surat District, similar conditions have prevailed for years past, short stapled cotton having been introduced by rail from Oomra and Bengal districts to be mixed with Broach styles. The quality of Broach cotton has for years steadily deteriorated, and very likely these foreign seeds have had a great deal to do with this deterioration. To put a stop to it is less easy in Broach than in other districts farther away from Bombay; the nearness of the Bombay market causes a great number of merchants in Broach, to deal with Bombay direct, and thus the control which can be exercised by a smaller number of exporting firms, as in the Tinnevely district for instance, is made considerably more difficult. This is further enhanced by the very large number of middlemen in the Broach district—who take no further interest in cotton cultivation and who are mostly responsible for the importation of foreign inferior styles, and also the prevalence of small ginning factories distributed all over the interior makes supervision, such

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as is exercised by the Agricultural Department and by buyers in the Tinnevely district under the *pulichai* agreement, one further difficulty. Under such conditions, probably nothing else but legislation would put a stop to this practice.

(c) *Exotic cotton.*

5649. (20 and 21) Experience and varieties.—The only exotic cotton I have had to deal with is Cambodia in the following districts:—

Coimbatore-Udumalpet	(3 months)	1915
Nandyal	(3 ")	1916
Tuticorin	(10 ")	1917-18

5650. (25) Conditions affecting increase in area.—That the cultivation of Cambodia cotton can be vastly increased is proved by this year's increase in acreage in the Coimbatore and Tinnevely districts, the increase in area under Cambodia cotton being estimated to be from 25 to 100 per cent. over last year, at the expense of rice and Tinnevely cotton cultivation.

5651. (26) Suitabilities of existing varieties.—The rapid development of Cambodia cultivation has shown that, where the soil and climatic conditions are favourable, and irrigation available, the cultivator is very well alive to the increase in income which the growing of Cambodia means to him and the good enquiry from consumers at satisfactory prices testifies to its suitability for spinning.

(2) If the experiments and trials of the Agricultural Department, Madras, with a further improved style of Company cotton are ultimately successful enough to justify general introduction, Cambodia will receive a serious competition in this new type, at least in the Tinnevely area, on account of its whiter colour and gloss, as well as regularity and length of staple. I understand that these experiments are, however, not concluded yet.

5652. (27) Prevention of mixing of different varieties.—On the question of mixing with inferior growths, I have already commented; I would like to add here the practice of certain cultivators to let Cambodia plants stand over for two seasons instead of sowing a fresh crop every year. This practice is equally condemnable as mixing with inferior styles, the cotton from "old" plants being far inferior to fresh sowings in length and strength of staple as well as in colour and cleanliness. The Agricultural Department, Madras, should try to prevent this practice as much as possible as it is impossible for the trade to do so. The so-called third and fourth pickings of one-season plants *must* be taken up by the trade although they are far lower than the first and second pickings and pickings from old crop plants can be mixed therewith so that the buyer has really no opportunity to refuse the pickings from two season or old crop plants.

5653. (28) Importation of seed.—American and Egyptian seed may be imported direct by the Agricultural Department and trials made therewith at Government experimental farms but successful varieties should only be pushed after trials extending over several seasons and the first seed given out for growing on a commercial scale should be kept with a few cultivators and agricultural or seed unions. When the Central Provinces Agricultural Department tried to introduce *buri* cotton, there came occasionally small arrivals into the market (half cart at a time or may be one or two carts) but in any case not enough to make it worth his while for the buyer to keep it separate. Thus he had no choice but let such long stapled *buri* cotton go with the rest of short stapled cotton and therefore could not afford to pay as much as he would willingly pay for marketable quantities, and, as a consequence, the grower was disappointed.

(2) Later on, when agricultural and seed unions are more firmly established, they might assist the Agricultural Department in such trials of exotic and other varieties—but the above-mentioned circumstance should be kept sight of. Disregard thereof leads to disappointment of the growers and unjust complaints that trade is not giving enough assistance.

(3) In this as well as in various other respects it would, in my opinion, be advisable if agricultural and seed unions were to invite representatives of the cotton buyers (local mills and exporters) to their meetings once or twice a year, where such is feasible, in order to benefit from the observations and experiences of the cotton buyers.

III.—STATISTICAL.

5654. (33) Improvement of cotton forecast.—Speaking generally, the Government forecasts have hitherto mostly been unreliable and rather late to be of much use to trade. The acreage figures, to start with, ought to be available sooner and not, as is very often the case, when the crop actually begins to move already. To obtain more or less accurate forecasts from officials, who have not the time to give which the subject requires, cannot be expected. The most reliable estimates should be available from the village headmen, who however, for revenue reasons, are likely to under-estimate. The next best medium should be the Revenue Inspector and the Agricultural Circle Inspector. If these officials are trained to the job and kept in the same circle for some years, they ought to be able to submit estimates which might have some claim to accuracy, provided they have the opportunity to check them from season to season. Experience and knowledge of the yield for each season for their respective circles are essential. Co-operation with private firms who make their own enquiries into crop conditions would probably help further in the compilation of accurate forecasts. The data so collected should be made available sooner than is the case now by publication in the official Gazette, perhaps by leaflets, to which interested parties could subscribe to cover expenses.

5655. (34) Improvement of other statistical information.—The above suggested leaflets might contain arrivals at the principal markets (as published by the Central Provinces Government where such markets exist) as also the press and mill returns now published separately.

5656. (35) Publication of Liverpool and Bombay prices.—Bombay and Liverpool cotton prices may be officially published where cotton markets exist—elsewhere I do not see what useful purpose such publication would serve.

IV.—MANUFACTURE.

(a) *Ginning and pressing.*

5657. (36) Type and number of gins and presses.—The gins used in the firms factories are double roller gins for soft long stapled cotton and single roller gins for rough short stapled cotton. The presses vary in system; at Tuticorin we have an Octopus Press, at Coimbatore a Hodgart Press.

Madras]

Mr. A. ZOLLINGER.

[Continued.]

5658. (57) Size of bales.—The bales turned out by these presses are:

at Tuticorin: 510 lbs. Bales of 9½–10½ cubic feet.

at Comblatore: 400 lbs. Bales of 10½ cubic feet.

5659. (40) Factory labour.—As a general rule, factory labour is available in sufficient quantities in the named districts; scarcity of labour, however, occurs at times of epidemics, or where the number of working factories at one and the same place is suddenly increased. At such places wages are correspondingly higher.

5660. (41) Condition of cotton.—Tampering with cotton is fairly frequent; in the Berars, excessive dampening of hand-ginned cotton is freely practiced by the ryots themselves; in the south, and in Tuticorin in particular, false picking of hand-ginned cotton by ryots and dealers is almost the rule. Machine-ginned cotton is less subject to such practices as the ginning is mostly under responsible supervision in the southern districts and Pears, but false picking of machine-ginned cotton is again frequent in Broach.

V.—GENERAL.

5661. (46) Attitude of buyers to improved cottons.—No sooner are improved cottons available in market than the buyers, in my experience, have been very keen to encourage cultivators. The fact that, in this district, Rs. 10 to Rs. 16 per 500 lbs. have been paid as premium for improved Company cotton over and above Tinnevely may serve as an example.

Mr. A. ZOLLINGER, called and examined.

5662. (Presidency) I was a long time in Berar. For Berar, it seems to be a sound thing to push *roseum*. Of course it has replaced a better staple cotton. *Roseum* gives a much better yield than any other variety and Berar cotton had deteriorated in staple very considerably even before the introduction of *roseum*. Only say four or five years ago, Berar cotton did not have very much staple to speak of so that I do not think that the even shorter staple of the *roseum* can have made very much difference compared with the financial advantage of its better yield to the cultivator. Nor do I think that it really very much matters to the trade provided *roseum* is kept to definite areas. It would probably be a sound thing to schedule certain tracts as suitable for it. *Roseum* is grown on account of its high ginning percentage and because it gets mixed with other cotton. It is quite a good cotton to grow with in Berar but I certainly do not want to see any *roseum* in Madras. If *roseum* were encouraged by the Agricultural Department I should consider the policy wrong. *Roseum* should not be grown in parts where better staple cotton can be grown and is equally profitable to the cultivator.

5663. In districts like Broach, experience has shown that cotton of better quality and class as well as staple can be grown. If that better quality cotton is grown pure and is kept free from admixture, I do not think that the argument that the cultivator gets a better financial return from the shorter stapled cotton holds good. The trade does not pay perhaps at the present moment for the so-called better staple quantities because it is a case merely of price and not of actual quality. In fact this Presidency serves as an example in that respect. Here ordinary Tinnevely cotton has always been known as one of the best staple cottons that India produced and yet when the Agricultural Department introduced Company cotton, all the buyers were prepared to pay a handsome premium over and above the rates for Tinnevelles. I do not know why that should not hold good everywhere.

5664. I cannot say whether the relations between the trade and the Agricultural Department are closer here than they are in Berar. In Berar, I was fortunate enough to meet all the officers of the Agricultural Department very frequently. I knew them all personally, so that in that respect it is much the same as it is there. It was less so in the Bombay Presidency but that was merely accidental as my stay there was of shorter duration.

5665. I do not think for any of the cotton districts near to the Bombay cotton market any such measures as the *polished* agreement here would be easily adaptable. Here they were possible on account of the distance from Bombay. Up there the market is flooded with a number of merchants from the Bombay side who could not be taken into an agreement such as exists in this Presidency for *polished*. Down here we have only got a few large firms. In Bombay, there are a very large number of small and irresponsible merchants. The deterioration in Broach cotton is chiefly due to the people who handle most of the crop up there. They are mostly members of the Borah community. There are a number of petty dealers who enter into forward contracts, speculate generally and if the market happens to go against them, they make no scruple about selling anything that they can get hold of as Broach cotton. I had only one season's experience of Broach in 1914. The complaints in regard to the actual deterioration of the Broach crop have become more marked of late years chiefly because the import of foreign *lappas* into the Broach district has been more marked of late than it was before.

5666. I have been handling Cambodia, Tinnevely and the so-called *upgam* in these parts. Cambodia is undoubtedly the best of these and it seems to be paying the cultivator best, otherwise he would not have gone in for it so largely as has been the case. This is my second season here. I have bought both Company No. 2 and Company No. 3. They are undoubtedly a great improvement on the ordinary Tinnevely. When the cotton is clean and well picked and the stained *lappas* is removed before ginning, it is a very beautiful cotton and a good price can be got for it for one can sell it to any body. We sold some to the Bombay mills and they were very pleased with it and asked us for more this year. *Upgam* is a coarser and rougher cotton than ordinary Tinnevely. It is also slightly shorter in staple. I would rather push it back. We can do better with *luringanni* where that grows well or else with Cambodia where the country is suitable for it.

5667. There is certainly scope for the development of the Department of Agriculture in Madras. The officers of the Department all complain that there is too much work for them and that they cannot devote as much attention to various subjects as they would like. The existence of the Department has been thoroughly justified.

5668. As regards the question of crop forecasts, I hesitate to answer. As regard this Presidency, I would not like to go on the result of one year's experience. In the Central Provinces, I went into this question very thoroughly with Mr. Low when he was Director of Agriculture and with Mr. Clouston and we discussed how the forecasts could be improved upon. I do not think that Mr. Clouston's idea of estimating the outturn by counting the bolls, buds and flowers in a field is feasible in India. Fields lying next to each other may

Madras.]

Mr. S. SHIOTA.

5682. There is now a separate forecast for Salems, Cambodia and Tinnevelles. That is an improvement. The crop of Salems is very small.

5683. (Mr. Roberts.) In my opinion, it is preferable to have open markets as in Berar. I prefer that system because all the firms can go to the markets and see for themselves instead of buying on forward contracts. If one buys from strong reliable sound dealers, there is no harm. So far, we have not had any difficulty in getting delivery of cotton from such dealers even when the market went against them but I prefer the system in Berar. At present, I contract for a certain quality but I do not know whether that quality will be delivered to me or not because the dealer may not be able to give it on account of unseasonable rains or owing to weather conditions generally. If I contract in the month of December for "fully good fair cotton," and "fully good fair cotton" is not available during the season then my firm has to suffer and to pay certain penalties, whereas if they based themselves on what I saw, they would always be on the safe side.

5684. Company No. 3 is a very good cotton and is much better than the Company No. 2. It is as good as Cambodia in point of staple and class. It is much better than ordinary Tinnevelles. I have heard that it can spin up to 44s. We were buying it the first year and paying a premium of Rs. 15 to Rs. 16 per local *khandi* for it, that is Rs. 20 to Rs. 22 per Bombay *khandi*, but now the premium has been reduced to Rs. 5 to Rs. 8 per Bombay *khandi*.

5685. (Mr. Wadia.) There are two styles of Tinnevelly cotton, "*uppam*" and "*karunganni*." Mixing depends on the firms. Rain damaged cotton will, of course, be sold on its merits. We have got good cotton openers here and when rain stained cotton is passed through such openers, the stain opens and becomes fainter in colour. All damaged and inferior cotton pressed in the Tinnevelly District is passed through openers, but not the sound cotton which is pressed as it is. I am under the impression that all the firms here have got cotton openers. The only thing is that our cotton is likely to be spoiled by the smaller factories which are being put up all over the district. There are small capitalists who are putting up such factories with the idea of making a large profit on a small capital. They are not particular about keeping their gins in order or about having *kapas* openers and there is no particular supervision of the factories. The result is that good cotton gets mixed in the gin house with oily and dirty cotton which mixture affects the class. It may be asked why do we not refuse to take delivery of such cotton. We cannot always refuse it on account of competition. If I refuse it, somebody else will take it. We have men to select the *kapas* in the factory premises and all damaged and inferior *kapas* is rejected and no money is advanced on it. I know that the rubbish that falls through the cotton opener is sold to dealers. They pick up the best part of it, mix it with hand ginned cotton and dispose of it. There is no other mixing. The quality of hand ginned (*churka*) cotton which comes is very small—only eight to ten thousand bales a year.

5686. For the last two or three years, I have noticed that much adulteration with seed has been going on. I think that some steps should be taken to stop these malpractices. Crushed seed and whole seed are often put in purposely in the case of hand ginned cotton. In the case of machine ginned cotton, I do not think that it is done purposely. It is due to the bad setting of the gins. It would be much better if the smaller ginning factories were placed under the control of the Agricultural Department. I mean by small factories those which have only up to six gins. The big factories are in charge of first class engineers, whereas the small factories are in charge of only fitters. No man should be allowed to erect a factory until complete plans with full details in regard to the number and kind of gins, whether double or single, the kind of engine and the kind of opener have been submitted to the Agricultural Department and approved by it. Such factories ought to be placed under the supervision of the Agricultural Department. It would not be fair to place only the small factories under the Agricultural Department and not the big ones. I think that the owners of big factories would not mind placing their factories under the Agricultural Department. It therefore comes to this that all factories must be put under the Agricultural Department. I would prefer that the small factories should be under the Agricultural Department rather than under the Factory Act.

5687. (Mr. Hodgkinson.) We sell only on types of course on our own types. We do not make up fresh types every year but we may add new ones of our own according to the qualities available each season. If the crop is damaged in quality, we have to take delivery of the best quality we can and ship it. We have got types for both good and inferior qualities. If the quality of the crop is good, we sell on the good quality types; if the quality of the crop is damaged, we have to sell on types of inferior qualities. We have got a range of types. Our object is to ship the cotton according to our types. In the case of forward buying, when the market is advancing and against the sellers, they sometimes try to pass off inferior cotton under their contract. It depends on the Firm whether it is accepted or not.

Mr. S. SHIOTA, Agent, the Japan Cotton Trading Co., Ltd., Sattur.

EXAMINED AT TUTICORIN, MARCH 12TH, 1918.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

(a) "*Deshi*" short staple cotton.

5688. (1) Experience.—I have been stationed at Tuticorin, Virudupatti and Sattur in the Tinnevelly, Madura and Ramnad districts about two years staying sometimes in each place.

5689. (2) Varieties.—Originally, no short staple cotton existed in these districts. But several years ago, a variety of short staple cotton called *pulichai* or *jari* was introduced from Bengal side.

5690. (3) Size of holdings.—The Government of Madras, during the last two or three years, have taken very drastic measures to put a stop to the cultivation of this *pulichai* or *jari* cotton and are still endeavouring by all possible means to secure the entire uprooting of this variety. Consequently no figures can be given.

5691. (4) Yields and profits.—The average yield is two to three *pothis*, equivalent to about 500 to 720 lbs. but to no advantage as this cotton is not marketable; the firms having stopped buying this variety by an arrangement amongst themselves.

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Mr. S. SHOTA.

[Continued.]

5692. (5) Rotations and manures.—Cotton and food-grains are cultivated in alternate years. Ordinary cattle manure is applied.

5693. (6) Comparative returns.—Though the staple is short, the ginning outturn for this short staple cotton is better than Tinnevely (*deshi* long staple cotton). The outturn is poor as compared with exotic cotton (American or Cambodia).

5694. (8) Uses of seed and seed selection.—The seed is used only for cattle food, and the cultivation having been stopped, no seed is kept for sowing; the Government have even burnt all the seeds available by purchasing from the agriculturists.

(b) "*Deshi*" long staple cotton.

5695. (11) Varieties.—Tinnevely or *upmam* and *karunganni* are the varieties grown in this district.

5696. (12) Size of holdings.—They say about sixty per cent. of the whole cultivated area is under cotton; out of this, 54 per cent. is under actual cultivation of all varieties of cotton, but no exact figure can be given.

5697. (13) Yields and profits and comparative returns.—*Uppam* or Tinnevely varieties yield about two *pothis* equivalent to about 500 lbs. *kapas*. The *karunganni* variety yields about $1\frac{1}{2}$ *pothis* or about 420 lbs. *kapas*. The *karunganni* variety produces a better outturn in ginning and, having somewhat longer staple than *upmam* or Tinnevely varieties, commands a profit of about Rs. 5 to 10 per *pothi* of 240 lbs. *kapas* over *upmam* or Tinnevely varieties.

5698. (15) Conditions affecting increase in area.—The cultivation of this long-staple cotton is being done from time immemorial, and as such all available area has already been cultivated. There cannot be any increase unless people do not care to cultivate some food-crops every year.

5699. (16) Suitability of existing varieties.—Generally right types are now being cultivated and the Government are now experimenting with the cultivation of *karunganni* variety at their farm in Koilpatti with a view to improving the staple of *deshi* long-staple cotton.

5700. (17) Prevention of mixing of different varieties.—We highly appreciate the endeavour of the Government of Madras and the methods adopted by them in connection with the improvement of long staple cotton and eliminating of short staple variety. The strong attitude of the buyers in co-operation against the short staple will put an end to the cultivation of that variety.

5701. (18) Uses of seed and seed selection.—The seed is used for cattle food. Some time back some were exported to Europe for extracting oil. Seed selection is practised by holding-back best dried *kapas* of first picking and then hand-ginning it.

5702. (19) General economic conditions.—The agriculturists are always in such a condition that they have to borrow money from capitalists at high rate of interest for dealing in cotton and seed, etc. Consequently co-operative agricultural banks, lending money at a reasonable rate of interest during the ploughing season and at the picking time, etc., will be a great boon to them.

(c) *Exotic* cotton.

5703. (21) Varieties.—Cambodia or otherwise known as American is the variety grown at this tract.

5704. (23) Comparative returns.—This variety grows by irrigation in red cotton soil unlike the *upmam* or Tinnevely, which are cultivated in black cotton soil. The acreage cannot be definitely stated. But it is on the increase year by year.

(2) The ginning outturn of this variety of cotton is better than that of *deshi* long-staple cotton, i.e., Tinnevely, by about eight per cent. and equal to that of *karunganni*. The yield is equal to that of *karunganni* cotton.

5705. (24) Rotations and manures.—Most of the plants of this variety are cultivated every year, but less than about 35 per cent. of the plants are kept for about two years, despite the deterioration in quality.

5706. (28) Importation of seed.—No experiments of imported seed have been made. It is very desirable to get seed imported from Egypt and America and try it.

II.—COMMERCIAL ASPECT.

5707. (30) Local trade customs.—In these districts, the farmers do not bring *kapas* to the factory directly, but there are some middlemen, who style themselves as cotton dealers and who act as intermediaries between the firms and the farmers. These make advances to the farmers according to their financial resources, and make contracts with them for small quantities. Then they, in their turn, sell in lumps to the firms and thus have the cotton marketed. These middlemen sometimes sell and buy and *vice versa* and thus taking the risk of the market on themselves. The business between the dealers and the firms is generally transacted in forward contracts for delivery in about two or three months.

5708. (31) Standardization of commercial names.—The commercial names of the various grades of cotton are—

Tinnevely	From Madura, Ramnad and Tinnevely districts.
Uppam	From Trichinopoly and Coimbatore districts.
Karunganni	From Ramnad and Tinnevely districts.
Cambodia or American	From Madura, Ramnad, Tinnevely and Coimbatore districts.

These are known by their respective names given and there is no need for any change.

III.—STATISTICAL.

5709. (33) Improvement of cotton forecast.—The forecast, which is being published, has not found its way into the hands of the traders. The same is more or less an official record for Government only. It is suggested that figures, such as acreage, yield, etc., may be collected for each *taluk* separately and published from time to time during the cotton season.

Madras.]

Mr. F. J. STANES and Mr. W. E. WINTER.

IV.—MANUFACTURE.

(a) *Ginning and pressing.*

5710. (36) *Type and number of gins and presses.*—Our factory with thirty double roller gins is in course of construction; besides, we have engaged 48 double roller gins and two hydraulic presses.

5711. (41) *Condition of cotton.*—Very often the ryots bring bad *kapas* and cotton mixed up with good stuff with a view to get the full price for good quality. But owing to the keen competition among the firms, it is difficult to prevent it.

V.—GENERAL.

5712. (46) *Attitude of buyers to improved cottons.*—Actually a premium of Rs. 10 to Rs. 16 has been paid per 500 lbs. cotton over Tinnevely for *Larunganni*, which is usually long-staple cotton.

5713. (47) *Effect of water rates.*—In these districts, no water-rate is charged as cotton is cultivated in black cotton soil.

Mr. S. SHIOTA called and examined.

5714. (*President.*) My experience has been confined to this tract except that I was in Khandesh for a very short period. Japanese are the biggest consumers of Indian short staple cotton. They also buy long-staple cotton. The bulk of the long staple cotton used in Japan comes from Branch. All the cotton I buy in India I export to Japan. I buy to suit the requirements of the mills in Japan. I send cotton to Japan on types which we have there. We send pure cotton to Japan and do not mix; my firm sells in Japan. We are only commission agents. Our purchases depend on the demand by the Japanese mills. We buy and sell at our own risk.

5715. I do not wish to add anything to my written statement except that I should like to see some effort made to stop Cambodia being kept on the ground for more than one year. This practice should be stopped as it spoils the cotton.

5716. I should also like some arrangements made to finance the ryots, who are now in the hands of the moneylenders. In Japan, there are many banks which finance the cultivators. The establishment of co-operative societies is encouraged in Japan.

Mr. F. J. STANES and Mr. W. E. WINTER, Directors, Messrs. T. Stanes & Company, Limited and Coimbatore Spinning and Weaving Company, Limited, Coimbatore.

EXAMINED AT COIMBATORE, MARCH 15TH, 1918.

Written statement submitted by Mr. F. J. Stanes.

II.—COMMERCIAL ASPECT.

5717. (30) *Local trade customs.*—Cotton in this district is purchased entirely from middlemen, who in some cases own ginning factories. They obtain their supplies from cultivators or smaller dealers who in many cases are under advances to them. Forward contracts are becoming increasingly the custom here and it is estimated that nearly one-third of the crop to be harvested in March, April and May has already been sold by these middlemen.

5718. (31) *Standardization of commercial names.*—The commercial names of the various grades of cotton with which I am best acquainted are as follows:—

(1) Cambodia, (2) *Uppam*, (3) *Thayampaliam Bourbon*, (4) *Chennimalai Bourbon*, and (5) *Nadam*.

The first two cottons are grown largely in the Coimbatore District, but also grow well in the Tinnevely District, whilst *Thayampaliam* and *Chennimalai Bourbons* are grown in the districts between Erode and Dharampuram. The present commercial names of all cotton in India might be altered with advantage to customers and dealers by adding the name of the local district in which the cotton has been grown, such as Coimbatore Cambodia, Pollachi Cambodia, or Coimbatore *upmam*, Pollachi *upmam*, Tinnevely *upmam* and so on. The same cotton and from the same seed often grows better in one district than in another.

IV.—MANUFACTURE.

(a) *Ginning and pressing.*

5719. (36) *Type and number of gins and presses.*—We use double roller gins by Platt Brothers, Limited, and have thirty such gins working at our Palladam factory.

5720. (38) *Saw gins versus roller gins.*—We have had no actual experience with saw-gins, but understand that they were the type of gins introduced when machine-ginning first began in this district. No doubt the saw-gin turns out a better quality and cleaner lint than a roller-gin, but it plays havoc with the staple because the crop comes in and ginning is in full swing during the hot weather; consequently the staple is very dry and brittle, so that it is easily strained and damaged in a saw-gin. Assuming that saw gins are the best type of machines for the long stapled Cambodia and Bourbon cottons, it would not pay to use them unless the air of the factory was rendered humid enough to strengthen the staple sufficiently to avoid breakage.

5721. (40) *Factory labour.*—We have not experienced any difficulty in obtaining labour.

5722. (41) *Condition of cotton.*—The *kapas* usually arrive badly adulterated with inferior cottons and diseased *kapas*, which has to be picked out to some extent in the factory. This could be avoided, if picking in the fields were to be properly supervised by the ryot or some responsible person.

Madras.]

Mr. F. J. STANES and Mr. W. E. WINTER.

[Continued.]

(b) *Spinning and weaving.*

5723. (44) *Condition of cotton.*—The condition in which cotton reaches our mills is very objectionable indeed in many cases, and this question, we consider, is the most important under this heading for, if proper action is taken, it would be the means of improving Indian manufactured cloth both in hand and power looms. Our chief objection in local cottons such as Cambodia and Bourbon is broken seed, which is due, in our opinion, to bad ginning, improperly set gins, gins in bad repair and ginning the *kapas* before they are well dried. Broken seeds in cotton are the greatest pest a cloth manufacturer could have, because like *nep* they cannot be got rid of in the course of manufacture and appear in the cloth when woven, giving it a very dirty and specky appearance. *Nep* is also very common in the above two named cottons, and this again is due to improperly set gins. Another great objection, which we have to make about the way the cotton reaches us, is that of mixing inferior grades with better grades to improve the average of the delivery. Sometimes we find Cambodia adulterated by *upnam* to give it a better colour, whilst it is a very common practice for dealers to mix *nadam* with Bourbon cotton also to improve its colour. *Nadam* and *upnam* cottons are very white but short in staple and are of cheaper grades than Cambodia or Bourbon and they are very often used for improving the colour of longer stapled cotton, at the same time bringing in more profit to the dealer. The remedies for the above two objections is the Government control of all ginning houses, for some ginners are the greatest “mixers” and are also the men who break the seeds and introduce *nep*, for in many cases the ginner is the middleman between the ryot and consumer. Where the ginner has no further interest in cotton than that of ginning it, the quality is of the best, but where the ginner is also the cotton merchant, it is very often the opposite. Until the ginning houses are controlled to see that each quality is kept separate and that the gins are kept in good order, we cannot expect any improvement in the condition in which cotton reaches our factories. As owners of a ginning factory, we are quite in favour of Government control.

5724. (45) *Effect on cotton market of replacement of short staple cotton by long staple.*—On the whole, short staple cottons in India have the best colour and these are used in cotton mills purely for blending and not for strength. If long stapled cotton is going to increase largely and short staple supply decrease, the demand for cottons of good colour is bound to increase, whilst the supply of same has decreased, hence we think that the price of the cotton will go up, whilst the rates for long staple will remain the same or go down seeing that supply has increased. In our opinion, the long staple cotton grown in India has seriously deteriorated on the whole, whilst the short staples, which are indigenous, have not altered in quality for ages. Cambodia cotton some five years ago was an excellent quality and equal to good middling American, but to-day this cannot be said of it. It is more or less stained and full of impure and unripe fibre with a dull colour. We think that if more attention was paid to the improvement of the indigenous cottons of India, better results would be obtained than those now obtained by Government from long staple cottons.

V.—GENERAL.

5725. (46) *Conditions of buyers to improved cotton.*—Our experience has been that buyers have been prepared and have paid higher rates for improved cottons, and cotton of good colour free from any impurities such as stained unripe fibres, broken seeds and leaf and of good staple will always find favour with any exporting firms or manufacturer in the district provided such is available in commercial quantities.

5726. (47) *Effect of water rates.*—We consider that the water rates charged have an effect on the cultivator's preference for a particular crop in so much that the water rate is a standing expense and it is on this expense and market rates for his produce that he decides on what to grow. Water rates and market value of produce are the two factors by which he must determine his produce whether cotton, paddy, or wheat.

5727. (48) *Desirability of alteration in water rates.*—We consider that changes are called for in the schedule of water rate at present in force for the reason that one crop requires much more water than another crop does, and a schedule should be prepared on a basis of a crop that requires the most or the least water.

Mr. W. E. WINTER called and examined.*

5728. (*Mr. Wadia.*) I am a Director of Messrs. Stanes and Company. We have spinning and weaving mills in Coimbatore with 47,000 spindles and 370 looms. We have two spinning mills, one old and one new and we are also running the Mall mills which are started by some Indians here, but did not do very well and so we took them over. The bulk of our production goes into weaving yarn. We use Cambodia, Thayampaliam Bourbon, Chennimalai Bourbon, Westerns and various grades of short staple cotton from the Bombay side. During the last five or six years, deterioration has occurred mostly in the staple and strength of Cambodia. Thayampaliam Bourbon is an excellent cotton still. Its staple is one inch. It is really a very fine cotton, very good to handle and spins excellently. It is mostly grown on the Dharapuram side. It seems to me to be a cotton which has a strong test for that particular district. Unfortunately the quantity of that cotton as compared with Cambodia is very small. We could buy up all that is cultivated. I think we take the bulk of it. We have not been able to understand why that cotton will not grow elsewhere. It is a dry crop cotton. There is nothing much in Chennimalai Bourbon cotton.

5729. The deterioration in Cambodia is in staple, colour and strength. The staple is not nearly so long as it used to be. The strength is also very much less than it used to be and the colour seems to have deteriorated. We have a sample of Cambodia grown on the Agricultural College farm here, in my office now. It is a most excellent type of cotton. I showed it to a dealer about six months ago and he said that I would never see that type again.

5730. We buy lint. We do not buy *kapas* so that we do not see cotton in the form of *kapas* here. We have a ginning factory at Palladam with about thirty gins where we get *kapas* but we do not actually buy it. The dealers merely bring the stuff to us to be ginned and we are simply ginners. The cotton belongs to other people. If we see good cotton, we may buy it for ourselves but we buy very little indeed from that ginning factory. It is purely and solely a ginning factory. We are not there to care for and look after cotton.

5731. The ginning percentage of what we call A. I. Cambodia is 38 per cent. and that of A. I. No. 1 cotton is 34 per cent. Irrigated Cambodia is decidedly better than unirrigated. That is one of the great points with this cotton. Cambodia is not a dry crop. Attempts to grow it as a dry crop have, in my opinion, caused failure in the strength and staple of the cotton. The cotton needs both irrigation that will reach the roots,

* Owing to Mr. Stanes' absence from Coimbatore, Mr. Winter was examined on his written statement.

Madras.]

Mr. T. G. RALLI.

and kept in order and that the cotton is not adulterated, you would be helping the manufacturer. Our firm would have no objection to a system of licensing. As I was on military duty until three or four days ago, I have had no time to go through the evidence given before the Committee and to consider the question of licensing, but personally I think that our firm would not have any objection to the issue of licenses to control ginners if they were found fraudulently mixing different varieties of cotton. I should say it is rather a good idea. If what is aimed at is the elimination of adulteration or spoiling of cotton, our firm would be most glad to help Government in the matter. I have no objection to making it a condition of the license that the gins should be properly set so as not to allow seed or other extraneous matter to pass through into the cotton. We ourselves endeavour to keep our gins so well set that seed is kept out. Seed which passes through the gin into the lint is most difficult to get rid of. As it is, we have to pass all our cotton through certain machines to try to get rid of leaf. I am not sure whether the leaf in the cotton is the result of bad ginning or the result of bad picking, no doubt bad picking has a lot to do with it. Cloth would fetch two annas more, per yard, if leaf and other extraneous matter could be kept out of it. A certain amount of broken seed comes in long stapled cotton but not so much as in short staple cotton. The major part of the trouble is the leaf that comes in Westerns. I consider seed selection is a remedy against deterioration. I see no reason why Government should not control seed for sowing purposes. How far Government control should extend needs consideration.

5738. All the gins in our factory are double roller gins. We have had no experience with saw gins. Mr. Stanes in his evidence has suggested that humidifiers would have to be used in a factory if saw ginned cotton was to be made to pay. I have had no experience of the effect of humidifiers on saw ginned cotton. The reason why Mr. Stanes suggested their use is that they keep cotton from becoming brittle. We have humidifiers in our mills for the express purpose of keeping cotton from becoming brittle, etc.

5739. As to the question whether long stapled cotton does not get a proper premium on account of its low ginning percentage as compared with short staple or whether it is due to mixing, all I know is that the mixing which goes on in the ginning factories deteriorates the cotton and when cotton is brought to us in a dirty condition we naturally pay less for it. If a man brings us a good sound solid lot of cotton which is unmixing and unadulterated, we pay more for it. The remedy lies in stopping this mixing in the ginning factories and the proper premium will come in consequence. There is one point. I think it is the exporters who have caused a tendency to mixing. They seem to be willing to take much inferior cotton to that which we would take for the same class as there is so much competition among them. The exporters to Continent mostly buy cotton on class and not on staple. They pay no attention to staple.

5740. (Mr. Hodgkinson.) We should only get about fifty *khandis* of cotton with a blow room loss as low as three per cent. The average blow room loss of Cambodia is eight per cent. When we get more than eight per cent. blow room loss we penalise the dealer. If Cambodia is properly grown, properly picked and properly ginned, it should not lose more than five or six per cent.

5741. The staple of Cambodia is weak this season owing to north east winds blowing and there being no moisture in the air. It is about one inch in staple. The staple of *upam* is from $\frac{1}{2}$ to $\frac{3}{4}$ ths of an inch. The average is about $\frac{3}{4}$ ths inch.

5742. We never find fly mixed with the cotton we get from Bombay. The fly which we get from our mills we use for our lower counts. We sell very little of it. We used to sell nearly all of it. But under improved methods of manufacture we now use almost every bit of waste we have.

5743. (Mr. Roberts.) I do not think the quantity of Thayampaliam Bourbon cotton which is grown, exceeds 3,000 *khandis*. The quantity of Chenhimalai Bourbon cotton is a little more, say about four to five thousand *khandis*. Thayampaliam Bourbon is one inch in staple. Good Thayampaliam Bourbon is over an inch. Cambodia is seven-eighths of an inch in staple. Bourbon is cheaper than Cambodia because it loses more in the blow room. The price of Bourbon is about Rs. 50 a *khandi* lower than that of Cambodia. The blow room loss of Bourbon comes to nine or ten per cent. It is the most varied cotton of all in quality but the staple is always right.

5744. I cannot say that the rule that the higher the ginning percentage the longer the staple applies in all cases. It seems to be so in the particular case of A-1 and No. 1. There is a difference of one eighth inch between them. For staple we should pay Rs. 10 more for A-1 quality than for medium quality for a *khandi* of 500 lbs.

5745. We condemned Mr. Wood's *karunganni* cotton because it was dirty. The *karunganni* which was given to us by Mr. Wood was not the same *karunganni* as that which I saw in Madras. In fact we did not think that the cotton we got from here was *karunganni*. There was not a sufficient quantity to put it to a spinning test. If that *karunganni* could be brought to seven eighths inch in staple in this district, it would be an immense boon. It is really a good cotton and is a dry cotton which is grown on dry land I believe.

Mr. T. G. RALLI, Agent, Messrs. Ralli Bros., Coimbatore.

EXAMINED AT COIMBATORE, MARCH 16TH, 1918.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

(a) "Deshi" short staple cotton.

5746. (1) Experience.—I have been stationed for three cotton seasons in the Tinnevely District and for the last year at Coimbatore. I am not in direct touch with cultivators.

5747. (2) Varieties.—The short staple variety grown in the Coimbatore District is known as *upam* or *ukkan*, which variety since the introduction of Cambodia (also known as American) has been steadily decreasing to about one-twentieth of the total crop.

(b) "Deshi" long staple cotton.

5748. (11) Varieties.—The mixed variety known as Bourbon-*nadam* (Bourbon, long stapled, about two-third, *nadam* short stapled one-third) is grown to a small extent—about one-twenty-fourth of the total crop—on light soils in the eastern parts of the Coimbatore District.

Madras.]

Mr. T. G. RALLI.

[Continued.]

(c) *Exotic cotton.*

5749. (21) *Varieties.*—The long stapled variety known as Cambodia (or American) is now generally grown all over the Coimbatore District.

5750. (25) *Conditions affecting increase in area.*—As most of the land in this district is suitable for the cultivation of Cambodia, the decrease or increase in the area under cotton depends almost entirely on the level of prices of cotton as against food crops.

5751. (27) *Prevention of mixing of different varieties.*—Practically no deliberate mixing takes place in this district but only accidental mixing to an unimportant percentage.

5752. (28) *Importation of seed.*—Without excluding the desirability of importing seed direct from America and Egypt for scientific experimental purposes, it may be considered essential to improve by selection the varieties already acclimatised in India, especially with a view to prevent the degeneration of a desirable variety.

II.—COMMERCIAL ASPECT.

5753. (30) *Local trade customs.*—The marketing of the crop takes place as follows :—

The petty dealers buy the *kapas* from the ryots in small villages and bring it to certain market places and resell the same to big dealers or the ryot himself brings the *kapas* to the market and sells the same either through a broker or direct to the big dealers. The big dealers, some of which are also gin-factory owners, buy the *kapas* in the local market either from the petty dealers or from the ryots and the *kapas* is then distributed to the ginning factories. The big dealers sell mostly on contracts, for short or long deliveries, to the buyers who are the Indian mills or their representatives, the local merchants and the exporters. The cotton is tendered, after ginning, in loose by the dealers against their contracts. But some of the buyers arrange to advance money to the big dealers on the security of the *kapas* and cotton deposited against their contracts in the ginning factories.

5754. (31) *Standardization of commercial names.*—The varieties of cotton grown in the Coimbatore District are :

- (a) Bourbon-nadam.
- (b) Uppam (or ukkan).
- (c) Cambodia (or American).

There are so far no special names for the different grades of each variety.

III.—STATISTICAL.

5755. (35) *Publication of Liverpool and Bombay prices.*—I do not consider publication of Liverpool and Bombay prices necessary as these prices are known through the local merchants, who receive direct information from Bombay.

Mr. T. G. RALLI called and examined.

5756. (Mr. Wadia.)—I have been three years in the Tinnevely district. In 1912, I was an Assistant at our Tuticorin Agency. In 1914, I was in charge of our Sattur Sub-Agency; in 1915, I was in charge of our Tuticorin Agency and in 1917, and this year I have been in charge of the Coimbatore Agency. I have been in touch with Tinnevely cotton and Cambodia cotton. My experience of Cambodia is that it is the best staple cotton that I have seen in India. I think the staple is deteriorating. It is shorter than it used to be and it is also uneven. As to strength, it is, of course, for the mills to give an opinion. The colour of Cambodia in this district is a little less creamy than it was. The tendency is to become whiter. The ginning percentage of Cambodia has kept at about 33, though, at the very beginning, when it was introduced in the Tinnevely district, I understand it was as high as 40 or 42 per cent.

5757. For the last two years I have not been in touch with the Tinnevely district so I cannot say much about *karunganni*. When I was in Tuticorin two years ago, I considered the staple comparatively better than that of ordinary Tinnevely. We do not buy *upnam*.

5758. I am of opinion that the staple of Bourbon-nadam when the percentage of Bourbon is high is better than the staple of Cambodia. Bourbon-nadam is grown mixed but in the latter part of the pickings the percentage of nadam is always higher because Bourbon is an early maturing variety. We occasionally buy this cotton. The Indian mills usually buy it. I have bought very little this year and I cannot say if it is deteriorating in quality. From the samples I have seen of Bourbon-nadam cotton this year, I should say that its staple is distinctly better than that of Cambodia. It can be grown profitably only on light soils in the eastern parts of the district. That is what I have heard from the dealers.

5759. At present the prices of cotton are so high that the area under cotton will increase and that under food crops will decrease. Cambodia and other cottons are marketed in a practically pure state. There is some accidental mixing in the field. On the border of the *upnam* tract, *upnam* is also mixed with Cambodia owing to carelessness in the ginning factories. I do not think it is done deliberately. The ginning percentage of *upnam* is 25 against 33 for Cambodia and besides the seed of *upnam*, when pure, commands a better price than that of Cambodia. I cannot say if the ginners try to gin cotton clean. It depends on the standard of selection of the buyer who takes delivery of cotton. We point out any defects in the gins to those factory owners who are under an agreement with us and they get the gins set right.

5760. There is a lot of forward buying in this district. This year is an exceptional year. So far as our experience goes, we have always been able to get the quality sold forward by the dealers on an average.

5761. (Mr. Hodgkinson.)—We sell on type samples. Of course, our types are revised from time to time. Forward selling does not tend to deteriorate the quality under normal conditions. When the conditions are abnormal and there is a big difference in price, the dealers who have sold heavily may be inclined to press tenders of inferior quality. We usually allowance cotton which is inferior to the quality sold. We do not pay a premium for a quality which is above the type but we average the superior tender with an equal quantity of inferior cotton. I am of opinion that the "mutual allowance" clause in the Bremen Arbitration Rules would encourage buyers to give a premium for cotton of better quality than the quality contracted for. I do not know whether allowances have been given to us under the mutual allowance clause of the Bremen Rules as these are matters which are centralized in our Bombay firm. Here we simply receive instructions to ship such and such classes of cotton. If the Bremen arbitration clause were adopted by Liverpool, I think it might tend to attract better cotton to the home market.

Madras.]

Mr. T. TAKAYANAGI.

5762. (*Mr. Roberts.*)—In normal years, I should say the proportion of crop here which is sold forward for long deliveries is about one-half and for short deliveries about one-half. By short deliveries I mean from five to fifteen days, and by long deliveries about two or three months. There is no ready market for lint. There is a ready market for *kapas* which is all bought by local dealers who sell it to the firms, who export cotton, from this district. We usually buy on certain types from the dealers. As a rule, the type on which the dealers sell to us is higher than what his tenders turn out to be; so allowances have to be made or some tenders have to be rejected. If any dealer delivers a lot of better quality, he usually gets a premium for it. It is difficult to select *kapas* to get an exact type of lint. It always pays the dealer to supply a lower quality than the quality contracted for. If he delivers to us higher grades, we can average them with the lower grades delivered by him. When we are buying *kapas* in a ready market, we select it up to our required types and pay accordingly.

5763. Taking the grades to be equal, the price of Bourbon is about the same as that of Cambodia. The staple of Bourbon is better but the quality is lower. Very much depends on the percentage of *nadam* also in the Bourbon. *Nadam* cotton is not grown separately.

Mr. T. TAKAYANAGI, Agent, Mitsui Bussan Kaisha, Ltd., Tuticorin.

THIS WITNESS WAS NOT ORALLY EXAMINED.

Written statement.

5764. *Necessity for seed selection.*—Practically I stayed last season at Tuticorin, as agent of the Mitsui Bussan Kaisha, Ltd., Bombay, and what I have gathered during my stay there, from personal knowledge and inquiry, I jot down here. There are two varieties of Tinnevely cotton in general classification, namely (a) *upпам*, (b) *karunganni*. The former is white in colour, but coarser in staple than *karunganni*. The latter is pure, original Tinnevely cotton, and as compared with *upпам*, it is brighter in colour and more silky and soft in staple. But, at present, the main part is composed of *upпам* and *karunganni* has not yet secured that development and spread which it really deserves. This is owing to the want of proper attention and thorough application on the part of the farmers for the cultivation and the improvement of its seed. In Koilpatti, there is a Government farm, under the supervision of an official from Madras. The object of this Government farm is worthy and commendable, as the underlying intention is to enable farmers to sow pure *karunganni* cotton-seed in order to increase the pure *karunganni* variety instead of the inferior *upпам*. But that excellent object in view is not fully attained owing to the absence of thorough co-operation on the part of the farmers to understand its intrinsic value and their own direct interest involved. Of course, the seeds are sold by the above Government farm at a higher rate, and the cultivators do buy them. The next season the farmers do sow these seeds, but the chief shortcoming, which is much to be regretted, is that when they gather *kapas*, they do not make it a point to get the same ginned and separate pure seeds, which may enable them to sow a good quality again the next season. The farmers, as a matter of fact, on the contrary sell away the *kapas* to the dealers or sub-dealers mixing it with inferior *kapas*, and thus the good intention of the Government farm in Koilpatti comes to be frustrated. It is essential that the farmers should be thoroughly impressed and educated upon the point of not selling out their *kapas* from pure *karunganni* seeds to the intermediary party, but that they should be shown the value of the desirability of separating the seeds from the *kapas* in their own interest before ginning, so that the undesirable and objectionable mixing to the detriment of the *karunganni* variety may come to be stopped and the pure variety may be more obtainable in the market.

5765. *Necessity for more ginning and pressing facilities.*—The one great point, which I have noted, under my experience in the Tinnevely district is the fact that, in points of ginning and pressing facilities, the district is very poorly provided. In fact there are a few gins and presses there, which can be counted on one's fingers. This indirectly reflects adversely on the interests of the farmers themselves, as the gin and press owners on the spot, being themselves the buyers of cotton, there is no wide field at hand for competition and the farmers have to part with their *kapas* to the few monopolists, who secure the advantage. In Virudupatti market, cotton arrivals from eastern and western sides indicate good quality, whereas the inferiority of quality is to be invariably found in the cotton arriving from northern side, and the cotton dealers are in the habit of watering the *kapas* and mixing with sand. Thus inferior *kapas* comes to be mixed up with the superior quality of the eastern and western sides and gets deteriorated as a whole.

5766. *Necessity for work on Cambodia cotton.*—In Coimbatore, Cambodia cotton is obtained. There are two systems of cultivation there, namely, garden and field cultivations. The garden cultivation of cotton depends upon the perennial supply of well water, and even when the monsoon fails, the cultivation can be had; but the field cultivation depends upon the monsoon and its vagaries. From my observation, I find that the garden cotton area is improving as the time rolls on, and in this respect, I wish to suggest the necessity of having a Government farm thereat, just as in Koilpatti, so that good and superior seed may invariably be supplied to the farmers every season to secure the betterment of the quality without fail. The one characteristic feature of the Coimbatore cotton, I have observed is the mixing of more worm eaten *kapas* as compared with other districts. It is essential therefore that this disadvantageous state should be improved by proper remedial measures by finding out the true cause and checking the evil. Cambodia cotton is much used by the Indian and European mills on account of its creamy colour and is nowadays requisitioned in Japanese markets, hence every effort at improving its colour and uniformity of quality will tend to secure a higher prestige and better demand for this cotton, advantageously to the farmers and the buyers.

5767. *Necessity for co-operation between Government and exporters.*—In conclusion, I would say that for the better upkeep and good name of the Tinnevely cotton in general, all the measures which the Government may take will be welcomed to get the quality of the pure cotton improved year by year, so that the evil that has long crept up in mixing the inferior *kapas* with the superior one may be checkmated, and the practice be uprooted later on. For the reputation of Tinnevely cotton, it is much desired that fuller co-operation should be given by the shippers to the Government in all the good and timely measures the authorities may take to attain the creditable object in view.

Madras]

Mr. CH. A. LIMBOUSSI.

Mr. CH. A. LIMBOUSSI, Agent, Messrs. Ralli Bros., Tuticorin.

THIS WITNESSES WAS NOT ORALLY EXAMINED.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

(a) "Desha" short staple cotton.

5768 (2) Varieties.—The short staple variety grown in this district was *pulichai* cotton which has now become extinct.

(b) "Desha" long staple cotton.

5769 (10) Experience.—I am stationed in the Tinnevely, Ramnad, Madurai and Coimbatore Districts. I am not in actual touch with cotton cultivators.

5770 (11) Varieties.—*Uppam*, *Karunganni* and *Cambodia* are the varieties grown.

5771. (12) Size of holdings.—The average size of holdings cannot be ascertained. The proportion of the holding is about sixty per cent. cotton and forty per cent. food and fodder crops in normal seasons. Of late, owing to the stimulus of high prices for cotton, the proportion under cotton has gone up to about seventy per cent. of the holdings.

5772. (13) Yields and profits and comparative returns.—Average yield per acre is—

217 lbs. *Kapas* 56 lbs. cotton for *uppari* (Tinne cotton)—23 per cent.

70 " " *Karunganni* —28 "

Profit per acre—*Uppam* Rs. 20 to Rs. 26

Karunganni Rs. 23 to Rs. 30

Average yield for *Cambodia* is 112 lbs. *Kapas* 137 lbs. cotton—33 per cent.

Profit per acre.—Rs. 20 to Rs. 37.

5773 (14) Rotations and manures.—Rotations followed are cotton with *cumbu* (*bajra*) and *cholam* (*pear*). The manures used are excrements of sheep herd, cowdung, ash, rubbish and silt of tank bed.

5774 (16) Suitabilities of existing varieties.—*Karunganni* can be still more largely introduced and grown, replacing *uppari*.

5775 (17) Prevention of mixing of different varieties.—Necessary steps were taken to eradicate the sowing of the short staple *pulichai* cotton. Present arrangement of penalising the admixture of *pulichai* *Kapas* up to three per cent. and rejecting any tenders of *Kapas* containing more than three per cent. *pulichai* is sufficient.

5776 (18) Uses of seed and seed selection.—The seed is used for cattle fodder exclusively. No special seed selections is practised except that of drying the *Kapas* reserved for sowing purposes. Both hand and machine ginned seeds are used for sowing.

5777. (19) General economic conditions.—Distribution of selected seed must be undertaken by the Agricultural Department. There is now a farm at Kailpatti, where seed of good quality may be stored and distributed through village officers. The poor ryots may be paid advances for properly manuring their fields before sowing. This may be done by establishing more co-operative credit societies in village parts. Ploughing the soil with improved ploughs and using improved weeding plants must be adopted. More facilities to ryots for digging wells may be given so that American cotton may largely be grown.

II.—COMMERCIAL ASPECT.

5778. (30) Local trade customs.—The ryots generally sell their *Kapas* to the merchants in their own or surrounding villages, who, in some cases, make to the prospective ryots, who could sell them *Kapas*, an advance of about fifteen to twenty per cent. of the value at the time of sowing, charging interest until the goods are delivered. These merchants from the villages adopt two modes of selling—

(a) They cart the *Kapas* to the nearest centre of ginning factory and sell same there to the merchants in *Kapas*.

(b) They trade themselves with the buying firms through the agency of well established cotton dealers in the factory centres. The dealers of the factory centres sell goods on behalf of the village merchants to the buying firms, both for ready and forward delivery, and attend to all the business such as, ginning, weighing, receiving payments against goods delivered, etc., charging a remuneration of about Rs. 2 to 3 per *khandi* of 500 lbs. The lint only is taken delivery of by the buyers and the cotton seed is removed by the sellers and sold at their risk. The dealers in the factory centres generally make advances before the commencement of the season to village merchants according to means and capacity, and charge interest until the amount is repaid by the end of the season to the dealers in factory centres, through whom the village merchants contract generally for forward delivery, the time allowed for delivery varying from two to four months. The sales for ready delivery are comparatively small, as advance on *Kapas* would be made by the buyers only on the goods previously sold. In the system of selling for forward delivery, the buyers in the Tinnevely and Ramnad districts have hitherto experienced no great difficulty in taking delivery of cotton even in adverse market conditions.

5779. (31) Standardization of commercial names.—The commercial names of the various grades of cotton are:—

Tinne.

Cambodia or American.

The above names are suitable.

5780. (32) Buying agencies.—The best form of buying agency is to contract with reliable merchants either for ready or forward delivery.

Bengal.]

Mr. F. W. SMYTH.

III.—STATISTICAL.

5781. (33) **Improvement of cotton forecast.**—The cotton forecast must be published separately—one for the produce of Tinnevely, Madura and Ramnad districts and one for Coimbatore district. Such forecasts will be more useful.

5782. (35) **Publication of Liverpool and Bombay prices.**—The daily publication of Liverpool and Bombay cotton prices in up-country markets will only cause excitement and no good purpose will be served.

IV.—MANUFACTURE.

(a) *Ginning and pressing.*

5783. (36) **Type and number of gins and presses.**—The class of gins we use is Platt's double roller. We have four gin factories containing 200 D. R. gins. The class of press we use is two press factories (*viz.*, one Cyclone press by Fawcett, Preston & Co., Ltd., Liverpool, and another by Henry Berry & Co., Leeds).

5784. (37) **Size of bale.**—9 feet 3 inches is the cubical measurement of the bale (the measurements being 4-0-3×1-5-3×1-7-3).

5785. (41) **Condition of cotton.**—The *kapas* is not properly dried in some cases, and it will be better if it is perfectly dried.

V.—GENERAL.

5786. (46) **Attitude of buyers to improved cottons.**—When *karunganni* cotton was newly introduced, a premium of about Rs. 16 per *khandi* of 500 lbs. was given and thus *karunganni* was largely grown, replacing *uppam* cotton.

VIII.—Bengal.

Mr. F. W. SMYTH, of Messrs. Kettlewell, Bullen and Company, Calcutta.

EXAMINED AT CALCUTTA, MARCH 20TH, 1918.

Written statement.

II.—COMMERCIAL ASPECT.

5787. (30) **Local trade customs.**—My firm purchases about 4,000 bales of cotton per mensem for use in the mills under its agency. We buy from cotton dealers in Calcutta and elsewhere, some of whom have their own ginning factories in the growing districts, whilst others act as agents for ginning factories or again merely as merchants. For some of our cotton we only pay after receipt and examination at our mills, whilst for some we pay eighty to ninety per cent. against the railway receipt or bill of lading and the balance after receipt and examination at the mills. We do not advance any money until the cotton has been despatched to us. We buy for ready and future delivery and, in most cases, subject to the rules and arbitration conditions of the Bombay Cotton Trade Association, of which we are members. I consider that the way in which we conduct our buying is that best suited to our requirements.

5788. (31) **Standardization of commercial names.**—The commercial names of the grades of cotton with which I am acquainted are:—

- (a) "Comilla" from Eastern Bengal.
- (b) "Bengals" from the United Provinces and the Punjab.
- (c) "Oomras" from the Berars.
- (d) "Nagpur," "Wardha" and "Hinganghat" from Central India.
- (e) "Coconadas," "Northerns" and "Westerns" from the Madras Presidency.
- (f) "Tinnevely" and "Cambodia" from Southern India.
- (g) "Burma" from Burma.

I cannot suggest any alterations in the commercial names, which are well understood in the trade, and I do not consider it important that the same name should be used for the same cotton from whatever locality it comes.

III.—STATISTICAL.

5789. (33) **Improvement of cotton forecast.**—The cotton forecast for Bengal, in which Province very little cotton is grown, being of small importance, is sufficiently accurate. The consolidated forecast for the entire cotton area of India is published in a most useful form, but its accuracy, in the light of past experience, is always doubtful, the tendency having been to underestimate the outturn. I cannot suggest any improvement other than greater accuracy.

5790. (34) **Improvement of other statistical information.**—The cotton press return as at present published is practically useless, seeing that the returns are obtained from less than twenty per cent. of the presses at work. It can only become really useful to the cotton trade when returns are obtained and published from a large majority of the presses.

5791. (35) **Publication of Liverpool and Bombay prices.**—With regard to the daily publication of Liverpool and Bombay cotton prices at up-country markets, I consider that such publication is inevitable in modern days and not detrimental to the interests of the cotton trade.

Bengal.]

Mr. P. VLASTO.

Mr. JOHN HOWESON, Director, Cossipore Cotton Ginning Factory.

EXAMINED AT CALCUTTA, MARCH 21ST, 1918.

Written statement.

IV.—MANUFACTURE.

(a) Ginning and pressing.

5805. (*Preamble.*) We have been carefully through the questions issued by the Committee and find that we are competent to reply only to those appearing under the heading of "Manufacture," viz., section IV(a).

5806. (30) Type and number of gins and presses.—Our factory is equipped with forty Macarthy single roller gins manufactured by Platt Bros. We have no presses.

5807. (37) Size of bale.—Our standard bales contain 350 lb. and are pressed at the Strand Bank Press.

5808. (38) Saw gins *versus* roller gins.—Our opinion of saw gins is that they are apt to destroy the staple of the cotton, whereas we achieve entirely satisfactory results with our roller gins.

5809. (40) Factory labour.—We have had no difficulty in obtaining the necessary labour.

5810. (41) Condition of cotton.—The condition in which the *kapas* reaches our factory is in no way objectionable.

5811. (42) Effect on machinery of replacement of short staple cotton by long staple.—The type of gin used by us is equally suitable either for short or long staple cotton and in order to deal with the latter, no substantial alterations would be necessary in regard to our machinery. This factory handles solely Dacca cotton, which is of short staple, and we have no experience of either long or new staple cotton. There is, however, a very much wider and more constant market for Bengal cotton, which is of middling staple, despite its inferiority in colour and general appearance. We should therefore warmly support any measures which might be taken to improve the staple of Dacca cotton.

Mr. JOHN HOWESON called and examined.

5812. (*President.*) My experience is confined to ginning only and to Dacca (Comilla) cotton which is all very short stapled and coarse. We gin the *kapas* and sell the cotton either to Calcutta shippers for export to Japan, Italy, Australia and North America or to the local cotton mills. The *kapas* reaches us in a satisfactory condition. It is not much damped; nor is it mixed with dirt. We divide almost the whole output between ourselves and Messrs. Ralli's who have a ginning factory at Chittagong. There is no pool and I think that Messrs. Ralli's and ourselves are the only people who are working ginning factories in Bengal. (There was and may still be a factory at Chandpur but it is not in use.) Of course a certain amount of hand ginned cotton comes on the market, as the seed extracted by the machine ginning process is of no use for sowing purposes. We should be extremely pleased to see long staple cotton which commands a much wider and more certain market, but just at the present moment it is easy to sell short staple cotton locally.

5813. We have forty gins, all single roller gins. We have no press of our own. We occasionally gin for outsiders and either make a small charge for ginning or do not charge at all according to the quality of the *kapas*. In the latter event, we retain the seed, for which there is normally a good demand, in lieu of payment.

5814. (*Mr. Wadia.*) Comilla cotton could be improved. Our factory is at Cossipore. There has been no deterioration in the quality of Comilla cotton. I should say that the cotton we are handling this year is the finest that we have ever had. On the whole it comes in very clean. The local mills generally buy from us in the rainy season and not before.

5815. (*Mr. Hodgkinson.*) I should say that the ginning percentage of Comilla cotton is about forty per cent. but it varies considerably according to the district from which the cotton comes. The length of the staple is very short and averages barely half an inch. We handle altogether anything between 60,000 to 100,000 maunds of *kapas* a year which is, I think, about half the total crop available for purchase. Apart from this about 75,000 maunds is ginned by hand, the seed being required for sowing purposes.

Mr. P. VLASTO of Messrs. Ralli Brothers, Calcutta.

EXAMINED AT CALCUTTA, MARCH 21ST, 1918.

Written statement.

5816. Long staple *versus* short staple cotton.—I have no direct agricultural experience. I therefore regret I can express no views on most of the points raised in this connexion. The broad conclusion that becomes apparent from a comparison of the yield of lint per acre, the cost of production and market value of American cotton and the principal growths of Indian cotton is that short staple cotton gives the cultivator an appreciably better return. And so long as this remains a constant and palpable fact, there can be no question of inducing the cultivator to relinquish short staple cotton in order to grow long staple to his detriment. It would be a bad business proposition and one that cannot be advocated with justice.

5817. Factors necessary for the extensions of long staple cotton (i) *Agricultural.*—It is, of course, self evident that the extension of the cultivation of long stapled cotton is a matter of vital importance for the Empire as a whole and it is incumbent on India to do everything possible to help in this direction. But this can only be done if the production of long stapled cotton be put on a sound profitable basis. The coincidence of several factors is necessary for this—some physical, some commercial, some moral. Under the first category fall such questions as the adaptability of the soil, the fixation of suitable qualities of the long stapled variety either by importation of foreign seed or the improvement of local strains on Mendelian lines, the measures necessary for ensuring a constant supply of unadulterated seed, the dissemination of better methods of cultivation. All these points come within the scope of the Agricultural Department.

Bengal.]

Mr. B. M. CHATTERJEE.

(2) (ii) *Commercial*.—As regards commercial requirements, I may mention the fact that it is a vital necessity for securing the full value of good staple cotton that the production should be large and of an even running and reliable quality. This has been achieved with American cotton in India but the experiments with Egyptian in Sind were a failure. It is impossible to get full premia for high grades when the supply is fitful and the quality variable. The moral factor is not the least important. Blind conservatism, ineradicable laziness, the ever present tendency to adulterate the quality and condition of the produce, have been and will continue to be for a long time to come the main stumbling blocks against a radical and permanent improvement. Little can be done by official control in such matters—punitive legislation is not to be commended lightly as it often is ineffective or else has detrimental effects by hampering trade unduly. It also lies open to the criticism that it deflects responsibility from the parties who have expert knowledge and who should be diligent enough to protect themselves to officials who cannot be experts and whose interest can only be vicarious. That the trade can protect itself against adulteration is evidenced by the case of *pulichai* cotton in the Tinnevely district. When the ryots realized that buyers were determined to boycott the inferior cotton they very soon gave up their attempts at adulteration.

(3) I may add here, however, that if the cultivator be made to improve his moral tone, spend more in cultivation, work more and worry more and at the same time he finds that he earns less by sales of long staple cotton then it is understandable that he should not be whole-hearted in his efforts to promote its cultivation.

III.—STATISTICAL.

5818. (33 and 34) *Improvement of statistical information*.—There has been a distinct improvement in the accuracy of cotton forecasts during the last two years. In my opinion, one of the best ways for improving returns is to exercise a stricter control over the ginning returns. Native gin owners are often careless in the figures they give but they could be made to realize the importance attached to prompt and accurate information if Government Inspectors be empowered to check the returns submitted with the ginning books and impose fines when any other means of correcting a tendency to negligence or dissimulation fails.

Mr. P. VLASTO called and examined.

5819. (President.) We see very little cotton in Calcutta. I was in the Punjab for a year or so. I have done really very little cotton work. Here we mostly buy Comillas.

5820. (Mr. Wadia.) I was for a year in Bombay. I have never been a cotton man, so that my evidence is really second hand. My work has been on seeds and wheat. Cotton adulteration is fairly prevalent and widespread. I have seen *kapas* watered. I have seen ginned cotton watered. I have seen *kajas* mixed with lint and inferior cotton mixed with superior cotton. A radical remedy is, I think, hardly likely to be found. I am strongly against legislation and do not agree with those of my firm who have expressed themselves in favour of it. Legislation is bound to be inquisitorial and must either hamper trade or be ineffective. The difficulty is to fix the ultimate responsibility. As regards the proposal that every bale should be stamped with the name of the press at which it has been pressed, that is putting the responsibility on the second line. It is the gin-owner who is the chief culprit. I do not think you can make the pressing factory responsible for the quality of the cotton pressed. I have found that when any body of traders wants to put a stop to anything, they can easily do so and I think that the remedy lies in the hands of the trade which could penalize any goods that were not up to the mark. Otherwise machinery would have to be instituted which might create a good deal of interference with the trade.

5821. Cotton in India is marketed in a dirtier condition than it is in America. There are many reasons for this. The methods of picking have undoubtedly got a good deal to do with it. Dampening is frequently resorted to and there is a temptation for the dishonest merchant to mix sand, stones and dirt with cotton. There is a scramble for cotton because the world's crop is short just now, and the buyer cannot afford to be too particular when the demand is so much greater than the supply. I am not an expert and so I could not judge the proportion of mixture in a mixed cotton but I understand that an expert could, for example, tell a mixture of fifteen or twenty per cent. of *deshi* with Punjab American. A good deal would, of course, depend on the kind of *deshi* that is used for mixing.

5822. By improvement of moral tone, I mean an improvement in the cultivator's and the trader's conception of honesty and straight dealing. I do not know whether the cultivator starts by being dishonest but like every one else he likes to make as much as he can. When the inferiority of cotton is due to defective methods of cultivation or of picking, that, of course, cannot be put down to dishonesty. It is merely ignorance or sloth.

5823. (Mr. Hodgkinson.) I have experience of exporting cotton both to Liverpool and to the Continent. Before the war, very little Indian cotton used to go to Liverpool; most of the cotton used to go to the Continent. Liverpool used to take rather good qualities on the whole. The low qualities were chiefly taken by Italy, Austria and Germany. A little went to Spain. In the Bremen Cotton Association Rules, there is a mutual allowance clause which does not obtain in Liverpool. It is an advantage to the seller undoubtedly to have arbitration on the mutual allowance clause, but I do not think that the adoption of the clause in Liverpool would of itself attract more Indian cotton to Lancashire. We have received "points on" under the Bremen arbitration in many cases. I think that the Bremen arbitrations were very fair on the whole.

Mr. B. M. CHATTERJEE, Secretary, Bengal Luxmi Cotton Mills, Ltd.

EXAMINED AT CALCUTTA, MARCH 22ND, 1918.

Written statement.

III.—STATISTICAL.

5824. (33) *Improvement of cotton forecast*.—I do not think the cotton forecast at present published in Bengal is accurate—practically no interest herein is taken by the Department of Agriculture. The little cotton we grow in the Province is chiefly grown in the Hill Tracts and the Garo Hill. It is coarse and harsh cotton and only fitted for mixing in union goods. Recently there has been a demand for the cotton.

Mr. H. A. F. LINDSAY, I.C.S.

(c) *Spinning and weaving.*

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Imperial.]

Mr. H. A. F. LINDSAY, I.C.S.

[Continued.]

marketing, causes which underlie the practice of mixing, safeguards against deterioration, etc. It is obviously necessary to examine these factors closely as they have a material bearing on any estimate of the permanence of improved methods or cultivation.

5836. *Deterioration in Indian cotton and its causes.*—India is essentially the home of short staple cotton. She uses it in her own mills, whose machinery is constructed for the purpose, and exports it to be spun by similar mills abroad. There are, however, limits to the shortness of the staple which can be used even by mills spinning the coarser counts, and for many years past there has been evidence of deterioration in the length of the staple, and a demand for improvement on the part not merely of oversea importers and Indian mills spinning the fine counts, but also of those spinning the coarser counts. Efforts have been made to check deterioration, partly by introducing long staple varieties, partly by improved methods of cultivating indigenous varieties. These efforts, within their limited extent, have attained some measure of success. Unfortunately, however, this success has been discounted by a retrogressive tendency due to perfectly natural economic causes. The cultivation of short staple varieties is too general and widespread in this country to surrender to an experiment which has hitherto only touched its fringes. Instead, therefore, of the long staple gradually superseding the short, as was hoped would be the case, the latter has merely made use of the former to enhance its own declining value. That is to say, the long staple is chiefly utilized to attract purchasers, and bring in better prices, for mixed bales which, if they contained only short staple, would not command so high a price.

(2) The above is, of course, merely a rough survey of the position in its widest aspect. Other factors have combined to produce the same result. Cultivation is still too often careless and unmethodical. The mixing of *kaps* leads naturally to the mixing of the seed and consequently to an irretrievable mixture of staple lengths in the crop as it grows and before it is marketed. Finally, the holdings are too small to produce more than a fraction of a bale, and there is no guarantee that the several parcels which will make up a 400 lb. bale will come originally from cultivators interested in the same variety of cotton.

5837. *The question of sale on length of staple.*—To combat these tendencies in favour of mixing, deep-seated as they are, there is the great and growing demand both for long staple cotton and for bales containing cotton of uniform length. Provision is already roughly made for uniformity of class by Association rule 41, naming the stations from which cotton may be tendered under specified contracts—see also forms of Association contracts. But the length of staple in any individual bale is only provided for, at present, firstly by the purchaser's general knowledge of the usual length of staple of the class of cotton for which he asks, secondly by the sample against which he buys. In America, purchases are made in terms both of quality (colour, cleanness, etc.) and of length of staple—the latter consideration being as important as that of quality and based not on the average length of the staple in each bale but on the length of the shortest staple.

(2) The American system has been quoted because it is obvious that the purchaser in India would find considerable relief if it could be introduced in this country. At present, as already seen, purchases are only on the basis of quality or class. One problem before the Committee is by some method or other to assist the purchaser in India to discriminate further, not merely between different classes of cotton but also between recognized lengths of staple within the same class. The problem is by no means an easy one. The real competition lies between two demands for long staple cotton—that of the mill, Indian and foreign, for spinning, and that of the dealer who wishes to improve, by mixing, the value of his short staple cotton. Quality *versus* quantity—the struggle underlying almost all adulteration in India.

5838. *The prevention of mixing of long and short staple cotton.*—The special difficulty in the case of the cotton trade is that the moral aspects are indeterminate. It is not merely a question of the fraudulent addition of water or dirt. The Committee have received evidence to show that watering is not so serious an evil as it once was, and the admixture of dirt could be checked by special clauses in the contract, as in the case of wheat. The real trouble lies deeper. On the strict merits of the case, it is no more immoral to mix long and short staple cotton than to mix hard and soft wheat for milling—provided the samples on which the contract is based is a fair sample containing both lengths of staple. For this reason, the writer is very strongly opposed to any legislation directly prohibiting either the mixing of staples or transport by rail obviously undertaken with a view to such mixing. The danger is a purely economic danger, threatening the cultivator as well as the mill-owner and shipper, and to attempt to combat it on moral grounds is merely to confuse the issues. We cannot condemn the practice of mixing as immoral—and at the same time leave it a paying practice. It were better to leave the trade to work out its own salvation. The defect is one of organisation, and only better organisation can overcome it. Let us see if this is possible.

(2) There are four principal interests at stake—those of the cultivator, the petty dealer or *lania*, the broker or *dahal*, and the mill. The gin and press owner is omitted for the present; for convenience, the shipper's interests are included in those of the mill-owner. Now, which is the agent interested in mixing? Not the mill-owner, for he is admittedly willing to pay higher prices for unmixed cotton. Not the cultivator, who is only too anxious to sow the crop which will bring him in the highest returns. Clearly the trouble lies with the middlemen who think they would lose more on their vast majority of short staple bales, than they would gain on the comparatively few long staple bales, if the cotton were sold separately and on considerations of length of staple as well as of origin. How can we make it pay the middlemen as well to stop mixing? In the existing proportion of long to short staple, they will apparently lose as a class—or at any rate they think they will, and prejudice in such matters is strong. The only solution is to encourage the marketing of unmixed long staple cotton by individual dealers, who are both willing and able to do so; and to trust that the sight of the additional profits which they earn will gradually stimulate other dealers to handle this cotton on similar lines and to encourage its cultivation.

5839. *Creation of a Licensing Board.*—The first essential, then, is that the purchaser should know exactly what he is buying and from whom, so that he will be able to return to agencies which have provided him with unmixed bales. This is the point at which the owner of the gin and press comes in. He is the person really responsible for mixing, since the cotton passes through his press. It is true that he is usually really an agent, ginning and pressing what is given him by the dealers and upcountry merchants. But let us view it as passing through his press and, even if he cannot actually check mixing, he is an important factor in any scheme of reform. I venture, therefore, to support strongly the proposal of the Bombay Cotton Trade Association that a Licensing Board should be created, and that no factories be permitted to work save under licence of the Board. For this legislation will probably be necessary. The licence would provide for the ginning of the bales so that the name of the press could be known, through however many hands its bales passed. Provision would also be made for accurate statistical returns from the press. The Board would consist of representatives of the trade (both mill-owners and shippers) and Government officers independent of both parties.

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Mr. H. A. F. LINDSAY, I.C.S.

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ments of Agriculture and Co-operative Credit. The underlying idea is that purchasers will know from what press a bale has emanated, will ask for bales similarly marked if it contains good staple, and will avoid the mark if it does not. I consider this a very sound proposal, particularly in the fact that it gives fuller scope to natural economic principles and does not try (as more drastic legislation might) to alter or control them. A defect is that it fixes the entire responsibility on the press-owner, who is frequently a mere agent pressing just what is brought to him, and cannot therefore always completely control the mixing of the cotton he presses. He will, however, undoubtedly bring influence to bear on his customers in favour of unmixed ginning and pressing; and his position is so strong that he ought to be able to do this effectually, particularly if a premium is secured for unmixed bales, which we are told will be the case. And he would be all the more willing to assist in the distribution of pure and good seed, and even possibly in the extension of co-operative credit, under direction from the Government officers on the Board, the constitution and functions of which would be (*mutatis mutandis*) not unlike those of the Assam Labour Board, with its control over the recruitment of labour for the tea gardens.

5840. *Imposition of an export cess.*—There are two further suggestions which I should like to offer. In the first place, the Board may have to maintain a staff of inspectors to watch operations at the gins and presses, prevent fraudulent marking, etc. For this and other expenses, income might be obtained by charging an annual fee for the licensing of gin and presses. If further funds were required, say to meet expenditure on seed distribution, demonstrations, bonuses, etc., a small export cess of a few annas a bale might be imposed. In Japan, it is understood that the cess is collected from steamship companies, by deduction from rebates falling due every six months to shippers. This is a simple method of collection and not burdensome to the trade, and might well be applied in India, provided rebates are granted to regular shippers by all shipping companies carrying cotton from India—a point which would have to be verified.

5841. *Certification at presses.*—In the second place, it may be desirable and feasible later on to introduce some method of certification at the presses, on lines which would follow official samples and grading. A certificate would cover a single bale or a series of bales (to be numbered as well as marked with the mark of the press) and would show not merely the class of cotton—Branch, Surat, Bengala, etc.—but also the grade and length of staple. The certificates would pass from hand to hand with the bales and would give a clear idea of the contents. This, however, would mean very careful supervision, and grading according to recognised official standards, and would take time and money to organise. An account of the American system of classifying and grading, quoted from a "Special Agent's" Report of the Washington Department of Commerce and Labour, is attached.

ANNEXURE.

Classification and grading of cotton in the United States.

We quote the following passages from the monograph on the *Packing and Marketing of Cotton* recently issued by the United States Department of Commerce and Labour:—

The classification and grading of cotton is an important, comprehensive, and intricate business, requiring thorough knowledge of the material, long training, skill, and good judgment. Ordinarily those engaged in the business of handling cotton can determine with approximate accuracy the general character or grade, but for the purpose of spinning yarn the judgment of the expert is essential, length, strength, and fineness of the staple being important factors with the spinner. The grade of cotton in the main is determined by the degree of colour and the quantity of foreign matter which it contains, such as dirt, leaf, etc., conditions that are readily recognized upon inspection by the buyer. Length and texture of staple, however, are not given as great consideration in the initial dealings as their importance would seem to require, nor are they considered by the classification committee of the New York Cotton Exchange unless there be a specific request for their inclusion.

In connexion with the subject-matter of this report, the classification and grading of cotton as now performed has special interest and a brief description of methods that obtain may prove helpful in studying the proposition to introduce a new system of grading that will have the authority and stamp of the Government. The difficulties that attend grading are plainly set forth in the report of the Bureau of Corporations on Cotton Exchanges. In Part I of that report, it is explained that the classification of cotton cannot be performed with absolute accuracy; that no two experts would class a large lot of cotton of assorted grades exactly alike, and that the same expert, classing a large lot of cotton twice, probably would not return exactly identical classification. The report continues:

Method of classification.

The classification of cotton is almost entirely by the eye. There are no mechanical means for performing this work. The differences of cleanliness, amount of leaf, and amount of colour are so gradual that it is exceedingly difficult, in classing cotton into the half grades, to determine exactly where each individual bale should be placed. The difficulty increases as the grade of the cotton falls below middling. With the grades of middling and above, it is a much simpler matter to class cotton with reasonable accuracy. What might appear to be very unimportant conditions exert a material effect upon classification. Thus, a passing cloud may easily influence a classifier, quite unconsciously, almost to the extent of a quarter of a grade. When snow is on the ground, it is very difficult to class cotton if the light is reflected upon the cotton or into the eyes of the classifier. Still again, very few bales of cotton are exactly uniform in character, so that if two small samples are taken from different parts of the same bale they might easily show a decided variation. It is customary in the New York market where two samples are drawn from each bale, to reject the higher sample. Even a single sample of a few ounces, however, may not be absolutely uniform in character. When it is stated that a bale of cotton weighing, say, 500 pounds represents approximately the yield of $2\frac{1}{2}$ acres of land, and that picking, on account of the low grade labour employed, is often carelessly done, it is easy to see how classification based on a sample of only a few ounces may give rise to much dissatisfaction.

Relative value of grades in the New York Exchange.

The basic quality of cotton is known as middling, and all quotations and sales are made on and from that basis. Classification is made and grades are established by a committee of experts employed by the New York Cotton Exchange, and the action of this committee is given recognition by the trade and governs

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[Continued.]

You have to take into consideration leaf, mixture of staples, crushed seed and dirt. There may therefore be four faults and not merely one as in the case of wheat. The only remedy that I can suggest has already been stated in my written evidence. I would ask Government only to organize the trade to protect itself. My suggestion is that a committee or board should be formed which should license gins and presses and that bales from each press should be marked with a distinguishing mark so that the ultimate purchaser may know from which press the cotton came. Then the purchaser who gets good cotton from a particular press will go on purchasing from that press and if the demand for good cotton is real, the demand for cotton from that press would increase. If a man buys cotton from three or four ginneries, mixes it and then presses it for sale, the purchaser would still be protected to this extent that he would not buy again from the same vendor, after this one experience, but would try to confine his dealings to bigger dealers who would sell him consistently good cotton. The owner of a pressing factory is not bound to press everything that is brought to him. He is a free agent. If he got a complaint that one of his bales, say No. 1022, contained inferior cotton, then the next time the buyer at fault brought him cotton, he could tell him that unless he gave him as good cotton as, say, Rallis, then he would press for him but not otherwise. The trade must be organised to protect itself. The success of this scheme depends on the strength of the demand for good cotton. If the demand for unmixed cotton is not strong, legislation itself would fail.

5811. In America, they purchase on length of staple and I do not know why they should not purchase on that basis in India. The purchaser, having decided to buy a certain quality of cotton, will then take into account the length of staple. In Liverpool, the purchaser of "middling" cotton knows what he is going to get. The ultimate price should depend on the length of staple. Marking the bales would assist a purchaser who wanted to buy good cotton.

5815. I think that the expenditure on the licensing body I have suggested would certainly be worth while. A similar question was asked when the Assam Labour Board was constituted in order to meet the conditions under which labour was recruited up-country. The licenses issued by the Assam Labour Board carry their own conditions such as the provision of proper sanitary arrangements for housing and conveyance. In the case of ginning and pressing factories, I would give licenses without any conditions except the marking of bales. I hope, later on, conditions to ensure against mixing will be added but that is a matter in regard to which the licensing board would have to move slowly. At the start the sole condition would be that the bales should be marked. One cannot tell in what circumstances or when, conditions discouraging mixing might suitably be imposed. I would not start with them. I would allow the Central Board to make its own investigations and its own rules.

5816. If long staple cotton were marketed separately from short staple, I think the former would fetch a better price than it does now, but, on the other hand, the short staple cotton might diminish in value. It all depends on this ultimate factor—the real strength of the demand for pure cotton. I know that there has been deterioration in districts which used to have a reputation for long staple cotton. The conditions are probably different in different districts. In some cases the deterioration has been due to the mixing of seed. What I want to get at is a scheme which will assist the purchaser who wants pure cotton to be able to purchase it. Under such a scheme as I suggest, the press owner would not press mixed cotton if he could possibly avoid it and if he did press such mixed cotton, he would get a lower price for it in the Bombay market. I do not say for certain that it will be necessary to impose conditions in the license which will prevent mixing; but the Central Board should certainly have power to impose such conditions if and as required.

5847. I have suggested in my written evidence that a small export cess of a few annas a bale might be imposed to meet the expenditure on seed distribution, demonstrations, bonuses, etc. I have suggested the levy of such a cess on the export trade, only if the funds from the licensing of presses are not sufficient and if the money is not forthcoming otherwise. I suggest a cess on exported bales only, because it will be easier to collect and because we have precedents for it, e.g., the rice cess, the jute cess and the newly constituted indigo cess. It is a very moot point as to whether an excise duty should also be levied. The export cess would have to be kept so low that it did not affect the cost of marketing in foreign countries. I should not like to see it so high as a rupee a bale.

5848. As regards the distribution of seed, I think it would be an excellent thing if Government could control the whole of it but that would require an enormous staff. I think that Government should open more demonstration farms but I am afraid that is rather outside my province. By bonuses I mean extra money to be paid to those who would press clean cotton.

5849. I do not know anything about the Japanese rule that any one who wants to sell cotton in Japan must sell it through a Japanese trade association, but Japanese shippers get a rebate from steamship agents with whom they have solely dealt over a period of six months.

5850. All classifications by names of stations might ultimately be done away with. Purchase should not merely be by class, but should also be by staple so far as possible. The grading of cotton grown in the same district from the same seed might be different but that would be a matter of detail to be arranged subsequently. The first duty of the board will be to go into points of detail like that.

5851. (Mr. Hodgkinson.) I am in favour of the same procedure being adopted in regard to Indian cotton as is adopted in regard to American cotton, i.e., the length of the staple should invariably be mentioned in the contract. The purchase should not merely be by class but also by length of staple. The introduction of a "mutual allowance" clause as on the Bremen Exchange would certainly tend to attract cotton to Lancashire. At present there is no mutual allowance clause in the Bombay arbitration rules. I am very much in favour of the introduction of an arbitration clause based on the Bremen rules. Any price that you may offer the cultivator would only reach him through the dealer. It is absolutely impossible to reach him direct. I do not know whether it would be possible to enforce a spot market in order to put a stop to future buying. I do not think it would be feasible.

5852. (Mr. Roberts.) The main reform would be to get pure staple. I consider that the licensing of presses and marking of bales would be a big step in advance. If the premium of long over short staple cotton is not sufficient, no legislation would affect a permanent cure. Over-drastring legislation can always be got round.

5853. As to the effect of a cess on the price of the cotton crop that is not exported, at present the foreign consumer and the Indian consumer compete for cotton and the local consumer has an advantage in the difference in the cost of marketing. This cess would add, say, four annas a bale to the cost of marketing Indian cotton in London and it would therefore result in a very slight further advantage to the local purchaser. It would not have any real effect on the price obtained by the cultivator because the ordinary

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Mr. G. FINDLAY SHIRRAS.

fluctuations in the price are so very much greater. I do not think that, in actual practice, the export cess on rice results in rice being sold any cheaper in India. Theoretically it ought to be so but, in actual practice, the cost of marketing abroad is so much greater that this slight addition does not affect the relations between the Indian purchaser and the foreign purchaser. The cultivator will not get any lower price from the local consumer as a result of a cess on cotton.

Mr. G. FINDLAY SHIRRAS, M.A., F.S.S., I.E.S., Director of Statistics, Calcutta.

EXAMINED AT CALCUTTA, MARCH 21st, 1910.

Written statement.

Part I.

MEMORANDUM ON THE IMPROVEMENT OF COTTON FORECASTS.

I.—GENERAL.

5854. *Preamble.*—The cotton area of India is from 18 to 25 million acres, the reported estimates of outturn range from three to five million bales of 100 lbs. each, and the average yield per acre about 80 lbs. (*vide* Annexure I). The outturn may be considerably increased if efforts are made (1) to increase the yield per acre either by more intensive cultivation or by the use of better types of seed; (2) to increase the acreage especially where irrigation is possible; and (3) to improve the quality of the staple (a) by the licensing of gins which would lead to the prevention of mixing of the seed and (b) by the supply of suitable seed on a large and business-like basis. The question as to whether the area can be extended is beyond the scope of the Department of Statistics. With regard to yield, it may be stated that amongst the three important cotton growing countries of the world, namely, the United States of America, India, and Egypt, India has the lowest yield per acre. The yield per acre in the United States of America is about 200 lbs. and that in Egypt as much as 450 lbs. The low yield per acre in India is due (a) to want of proper care in cultivation or to the use of less prolific types of seed, (b) to underestimating to a large extent by the local reporting agencies on whose reports the statistics are primarily based. This Department is concerned with this latter point and the present memorandum, therefore, deals with the question regarding the improvement of the estimates as published in the Cotton Forecasts.

II.—THE PRESENT METHOD OF FRAMING ESTIMATES.

5855. *The factors in framing estimates.*—Under the practice in vogue there are three factors which contribute to the framing of an estimate of the outturn of a crop in India. These are the area, the standard normal outturn per acre, and the anna estimate or the percentage estimate representing the relation of the year's crop to the normal per acre.

5856. (i) *Area.*—As regards the first item—area, there exists in the village establishments of most provinces an agency capable of reporting the area under the crop with a great approach to accuracy. In tracts, where village establishments do not exist (*e.g.*, the permanently-settled tracts) the figures of area are based on rough estimates. These estimates once framed are liable to become stereotyped and repeated year after year without regard to the influence of exceptional seasons or changes in the economic conditions of the tracts. In order to prevent this, provision is now made in this Department for an annual examination of the figures as they are received and provincial authorities are supposed to revise these estimates by a comparison with the conditions prevailing in the adjoining areas possessing a similar character for which accurate information is available, as also by means of such special enquiries as may be possible. In cases where a forecast crop is sown mixed with other crops in the same field, the practice is to show such area only as is estimated to represent the area covered by the forecast crop alone. The estimate is based on formulas prescribed by the provincial authorities, according to local conditions which are not identical for all the crops nor for all the provinces.

5857. (ii) *Standard normal outturn per acre.*—With regard to the second factor, the Agricultural Department in each province maintains a statement of the normal or average yield per acre of land of average quality. In order to test the accuracy of these standards of normal yield and to revise them, where necessary, a system of crop-cutting experiments is in force in all the provinces. These are conducted annually by local officers on selected plots of land of average quality and in accordance with rules specially framed by the provincial authorities. The results are reported to the head of the provincial Agricultural Department who, on a careful scrutiny of all the reports and after such further investigations as he may deem necessary, revises or criticises the standards previously adopted for the districts or the province. This revision is ordinarily made once in five years. These yields are not used for the forecasts in Burma and the same applies more or less to Madras.

5858. (iii) *The anna or percentage estimate.*—The third factor is the anna estimate or the percentage estimate, which represents the relation borne by the crop reported on to the normal per acre. Almost all over India the outturn is estimated in annas or sixteenths, that is to say, a certain number of annas is taken to represent the normal outturn and then the outturn of the year of report is estimated as so many annas higher or lower than the normal. But the anna estimate of one tract is not amenable to comparison or combination with that of another tract; for the number of annas taken to represent a normal outturn is not the same everywhere, but varies between twelve and sixteen annas. Consequently, as the anna standard thus adopted would not possess any fixed or uniform value, it was arranged that in published forecasts the anna notation should not be used, the American notation being used in its stead, 100 being taken to represent a normal crop and the estimated outturn being stated as a percentage of that crop, the conversion of the anna estimate into the percentage estimate being made either by the district officer or by the provincial authorities.

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5859. *Relation of the factors to the quantitative estimate of outturn.*—When these three factors are determined, they are multiplied with each other to arrive at the quantitative estimate of outturn. Thus, if the area be 2,000 acres, the standard normal outturn 500 lbs. and the percentage estimate 80, the estimate of the total outturn would be $2,000 \times 500 \times \frac{80}{100} = 800,000$ lbs.

III.—DEFECTS IN THE ESTIMATES.

5860. *Defects in regard to area figures.*—With regard to the first factor—the area figures—it may be stated that whatever be their source, it cannot be gainsaid that they are, on the whole, fairly accurate, and this may well be guessed from the fact that merchants do not demur to accept them as the basis for their own calculation of outturn. Still the system is not quite unimpeachable. Instances have occurred when the estimates of district officers in certain tracts have been found not to tally with actuals. This is mainly due to omissions in reporting on the part of village officers. Even for crops for which there than one sowings return is made, it frequently happens that a *tahsildar* reports in the later return a less area cultivated with a certain crop than in his former return, and he may or may not add a remark that returns from one or two villages have not been received by him. As far as he is concerned, that does explain the decrease in the figures reported by him, but it does not help the provincial Director in framing the provincial estimate, for although he has some idea of the prevalence of certain crops in certain tracts, he has not that knowledge for all the villages in the province.

5861. *Defects in regard to the standard normal outturn per acre.*—Next with regard to the second factor—namely, the standard normal outturn per acre. It is difficult to determine the true normal, which is rather of a visionary character. In fact considerable difficulty has been experienced in all countries of the world in arriving at what a normal outturn is; but still it seems to have been recognised that the normal standard is the best as the base for estimating outturns of crops. In this connexion, the following passages quoted from the United States Department of Agriculture Circular 17 (1915) may be of interest. "Special consideration has been given for many years to the so-called 'normal,' representing a condition or yield of 100 per cent., in terms of which all the crop condition estimates of this bureau are expressed. An objection to the use of this term and what it represents, as a basis for crop reporting, arises from its apparent vagueness and the fact that the yield represented by it is different for each locality and even for each farm, thus requiring explanation in order to be understood. The principal advantage of the term 'normal' is psychological in that it is based on a fundamental conception which is fairly uniform and clear in the minds of all practical farmers from whom over 99 per cent. of the crop condition reports of this bureau are received."

"This whole subject of standards or bases for crop reports has been thoroughly and repeatedly considered, both in this country and abroad. On every occasion when the subject has been considered in this bureau the normal has seemed to possess more advantages and fewer disadvantages than any other standard."

(2) In India, the term normal has been defined as "that crop which past experience has shown to be the most generally recurring crop in a series of years; the typical crop of the local area; the crop which the cultivator has a right (as it were) to expect and with which he is (or should be) content, while if he gets more he has reason to rejoice, and if less he has reason to complain." The term has also been defined as "the figure which, in existing circumstances, might be expected to be attained in the year, if the rainfall and seasons were of a character ordinary for the tract under consideration, that is, neither very favourable nor the reverse." As already stated above, the standard normal outturns are determined by local authorities on the basis of crop cutting experiments and other investigations made by them from time to time. Experience has shown that experiments conducted by the district revenue staff are not always reliable, and the provincial Directors have often to depend on other sources, e.g., the Settlement records,* for revising their standards. Whatever may be the source, it cannot be said that the standards so far arrived at are entirely satisfactory although they are gradually being improved. In 1915, it was pointed out by the Government of India that "the rules adopted in the various provinces for the conduct of experiment if cuttings were not uniform especially in regard to the area to be experimented on and the grade of officers selected to superintend experiments," and the following instructions were issued in order to improve matters:—

"The three agencies now employed are officers of the Revenue, Settlement, and Agricultural Departments. While much valuable work in this direction has been done in the past by officers of the Revenue Department, there are serious objections to a system under which reliance is placed mainly on this agency. The selection of a typical field is a matter of no little difficulty to one who is not an expert, and members of the district staff over-burdened, as they are, with ordinary duties, can scarcely be expected to find time for experiments which even in the simplest cases takes a long time to carry out properly. As regards the employment of officers of the Settlement Department, it was not intended that this agency should not be utilized and, if for no other purpose than to gauge the relative assessment capacities of various classes of land, crop-cutting experiments must continue to be made during settlement operations. The results of such experiments, examined and collated by officers of the Agricultural Department, are of considerable value and should continue to be used in ascertaining average outturns. But provided always that the staff is adequate there can be no doubt that, if accurate results are to be obtained, reliance must be placed on trained officers of the Agricultural Department who would continuously and on a well-ordered plan carry out experiments in each agricultural tract. If the staff is not sufficiently strong to enable this to be done, it is desirable that efforts should be concentrated so that for, at all events, a portion of the province results of real value may be obtained." Local Governments are taking steps in order to carry out these instructions, and the effects of the steps have yet to be seen.

5862. *Defects in regard to the anna or percentage estimate.*—It is in the third factor—the anna or percentage estimate—that the system has been found to be most defective. For, the true relation of the season's outturn to the normal is seldom determined or reported, the tendency being invariably to under-estimate a good crop. A comparison with the trade figures (net exports plus consumption) conclusively

* In Burma it is stated, that the standards for making forecast estimates are based entirely on data collected by Settlement Officers during settlement operations, the results of crop experiments conducted by district officers being rejected as unreliable.

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proves on which side the official estimates err. The statement below compares the total figures for All-India* for the last ten years:—

	Area (acres)	Official estimate of yield (bales).	Net exports and consumption in and outside mills (bales).	Percentage excess (+) or deficit (—) of column 3 as compared with col. 4.
1	2	3	4	5
1907-08	21,630,000	3,122,000	3,782,401	—17.5
1908-09	19,099,000	3,692,000	4,200,160	—12.1
1909-10	20,545,000	4,718,000	4,928,000	—4.3
1910-11	22,896,000	3,853,000	4,303,000	—10.5
1911-12	21,615,000	3,288,000	3,985,000	—17.5
1912-13	22,028,000	4,010,000	4,483,000	+2.8
1913-14	25,023,000	5,066,000	5,913,000	—14.3
1914-15	24,595,000	5,209,000	4,889,000	+6.5
1915-16	17,746,000	3,738,000	5,109,000	—26.8
1916-17	21,745,000	4,489,000	4,628,000	—3.0
AVERAGE	21,752,000	4,179,000	4,622,000	—9.6

(2) The exports as well as the mill consumption are for the year ending the 30th September up to 1910-11; from 1911-12 they are for the year ending 31st August (the recognised cotton year in India). No reliable information exists as to the annual consumption outside mills; but, in 1911, it was settled in consultation with the Bombay Cotton Trade Association to adopt the conventional estimate of 450,000 bales. This figure has been included in the net exports and consumption figures for each year up to 1913-14. The figure was revised in consultation with the Association and raised to 1,000,000 bales for the exceptional year 1914-15 and to 750,000 bales for each of the years 1915-16 and 1916-17. It will be seen from the above figures that in two cases only the official estimate shows an excess, while in the remaining eight it shows a deficit. "Carry over" is, however, not included in the above figures; but this item does not affect the comparison if a series of years is taken into account. Thus, on the average of the last ten years, the net result is that the official estimate shows a deficit of 443,000 bales or nearly ten per cent.

(3) This tendency of under-estimating owes its origin firstly to the ingrained pessimism of Indian cultivators and village officers. The cultivators possess an ineradicable instinct that it is imprudent to estimate a bumper crop as a bumper crop. The village officers have mostly to rely on the estimates of the cultivators as they have no expert knowledge in the matter. The upshot is that very rarely is a normal outturn reported. This is clear if one looks at the estimates of outturn of cotton in percentages of normal given in the provincial Season and Crop Reports. For facility of reference statements showing such percentages for the ten years ending 1916-17 are given in Annexure II. A table showing median averages for the provinces has also been prepared and is given below:—

PERCENTAGE ESTIMATES OF OUTTURN.

Median averages for the provinces.

Provinces	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
United Provinces	50	80	87	80	70	90	60	80	80	75
Punjab { Irrigated	80	77	92	80	77	102	92	82	70	95
{ Unirrigated	50	65	80	75	50	95	80	70	60	90
Madras	75	67	75	67	67	75	67	67	75	98
Bombay	50	50	83	69	35	70	80	70	75	83
Sind	67	62	71	67	58	67	58	50	50	58
Burma	63	90	100	75	99	100	87	75	73	80
North-West Frontier Province { Irrigated	80	87	85	77	77	90	90	82	70	95
{ Unirrigated	80	100	90	90	80	80	75	90	85	70
Central Provinces and Berar	58	77	100	90	98	83	78	90	100	80

NOTE.—Bengal, Bihar and Orissa and Assam do not show percentage outturn of cotton in their reports.

It will be seen from these statements that a 100 per cent crop is rarely reported. Secondly, it is due to the fact that the subordinate agency finds it difficult to regard 100 per cent or sixteen annas as representing a

* Detailed figures of area, estimated yield, and yield per acre are given in Annexure I.

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normal crop. This defect vitiates the whole system and sometimes makes our forecasts ridiculous. If we want to make these serve the purpose for which they were called into existence, namely, to give to the trade as accurate an indication as possible of the expected outturn, the existing system requires revision. In this connexion the following extracts from a letter from the Director of Agriculture, Madras, bringing out the defect of the system and suggesting ways for correcting the estimates, are very interesting :—

"A tabulation of the figures of past years shows that the average crop over a series of years in any district works out at about 75 per cent of the 'normal' crop. This shows clearly that the *karnam* (village accountant) upon whom the whole system depends, invariably underestimates the outturn, or in the alternative, does not understand what a 'normal' crop is." "There are two ways in which the estimate could be made more accurate :—(1) by inducing the *karnam* to change his mental standard and to report a 'normal' crop as twelve annas, or (2) by introducing a correcting agency at some stage.

(1) would be extremely difficult, if not impossible, and would in any case take ten to twenty years. It is very difficult to define a 'normal' crop. The outturn of such a crop really varies in each small tract of different soil fertility. On the other hand, (2) would be easy, and could be done at once." "The existing system gives us a very elaborate relative classification of crops according to their yield, and this is a firm basis on which to work. Any attempt at altering the system radically would only upset this basis. All that is necessary is to raise the standard by applying a suitable correcting factor. This could be done almost automatically as detailed below. Suppose that the average outturn of a particular crop in a particular district as worked out on present lines for the last ten years (excluding real famine years) comes to 75 per cent of the normal, and that the current year's estimate worked out on present lines comes to 80 per cent. I would then correct this latter figure by applying the correcting factor 100—75 the result being 107 per cent. The final result of such a system would be that over a series of years the average, i.e., normal crop would be reported as 100 per cent. Allowing for the real famine years, the average would be a little below 100 per cent. This, I presume, is the standard to be arrived at."

IV.—SUGGESTIONS FOR IMPROVEMENT.

5863. *Necessity for further co-ordination.*—The main suggestion for improvement is the necessity for further co-ordination. Unless local authorities see their way to check more than at present the estimates of outturn, I am of opinion that the publication of provincial forecasts should be discontinued and one forecast published by the Central Statistical Office which should be closely in touch with exports.

5864. *Improvement of figures of area.*—With regard to area, the omissions in reporting on the part of village officers may be successfully stopped if measures such as prescribed by the Madras Board of Revenue in their Resolution No. 2 of 5th January 1915 (*vide* Annexure III) were adopted in every province where the village revenue staff exists. They are briefly as follows: The Revenue Inspector or Circle Officer should maintain statements in which figures should be posted every month from the cultivation accounts received from the village officers showing the sowings in each month for all forecast crops. He can thus see at once for what villages returns have not been received. For the villages for which returns are not received, he can frame an approximate estimate in accordance with the following formula :—

Area in the previous year in that village \times area in the current year in the other villages in the circle.

The total reported area in the other villages in the previous year.

In sending his return to the *tahsildar* he would note the number of villages for which he made estimates. The *taluk* office would maintain similar registers for the groups of villages under the Revenue Inspectors.

5865. *Improvement of estimate of outturn.*—With regard to the estimate of outturn, I am afraid a great overhauling is necessary, and I would make the following suggestions :—

- (a) The reporting agency should be improved as far as practicable by employing men who have received practical training in agriculture. At present the agency is a revenue agency, not an agricultural. It is quite impossible to make anything like an accurate estimate of the crop on the ground as could an agriculturist.
- (b) A system should be introduced for a very close and careful check of the returns by agricultural experts in the local as well as in the central offices. At present the returns submitted by the local reporting agency is seldom checked in the majority of provinces owing mainly to the fact that the provincial Directors of Agriculture have little time to devote to statistical work with the result that great difficulties are sometimes experienced by the Department of Statistics in preparing the all India estimates. The point is dealt with in a subsequent paragraph.
- (c) The system of checking the returns by the statistics of exports, mill consumption and extra factory consumption, when these are available should be extended. This is already being done in some of the provinces and is also done in this Department for the whole of India (*vide* "Final general memo. on cotton" and "Estimates of area and yield of principal crops in India"—table relating to cotton and also the table in paragraph 5862 above). In respect of extra-factory consumption it may be stated that the Bombay Cotton Trade Association decided last year that, in the absence of any accurate data, it should be estimated at the yearly rate of one lb. per head of population (giving a total of about 750,000 bales per year for all India), and that this figure should be permanently retained except in cases of very exceptional years.
- (d) The system of obtaining estimates from non-official agencies for checking and revising, if necessary, the official estimates should be introduced or extended, as the case may be. There have been instances when estimates made by those in the trade for a particular tract with which the estimators are specially interested have been found to be close approximations to the actuals. In the United States of America (sometimes not a completely analogous case as conditions are there different in many respects) the official returns are examined and checked with a vast number of voluntary reports obtained from various sources, e.g., farmers, planters, merchants, mills, presses, gins, etc. (*vide* Annexure V). It may be stated here that, at present, the system obtains, although rather in a crude state, only in a few provinces of India, mainly in the United

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October of 10,950,000. These figures indicate how our forecasts compare with the actual out-turn." In 1916 it was found necessary to obtain from the various provinces in British India the proportion of lint in the various descriptions of cotton grown in them. The results then obtained are tabulated below:—

	OOMRAS				BENGAL-SIND			
	Khandesh	Barl and Nagar	Berar	Central Provinces	United Provinces	Rajputana	Sind-Punjab	Others
Bombay (a)	35	33	..	..	..	35	..	..
Central Provinces and Berar	33	33	..	..	..	..
Punjab (b)	30	..
United Provinces (b)	33	..	..	..
Sind (b)	33	..
Bihar and Orissa	27
Bengal (b)	30
North-West Frontier Province	25	..
Ajmer-Merwara	33	..	..
	Dhollerias	Droach	Coompta-Dharwars	Westerns and Northern	Cocanadas	Tinnevelly	Salems (including Cambodias)	Comillas, Burmas and other sorts
Bombay (a)	35	34	28	25	..	..	..	..
Madras (b)	25	30	25	30	25
Burma	33
Bengal (b)	39
Assam	40

(a) Includes Baroda and other Native States.

(b) Includes Native States.

It is noticeable that long stapled cottons, such as Coompta-Dharwars, Westerns and Northern, Tinnevelly, etc., have a lower ginning percentage than short stapled varieties; and this is one of the reasons why Indian cultivators generally give preference to short stapled cottons.

(k) It is not known how far the results obtained on Government experimental farms are utilized by the provincial Directors in connexion with crop forecasts. Much valuable information can be obtained from the reports on experimental farms for revising the standard normal outturns (referred to in paragraphs 5857 and 5858) and for ascertaining the ginning percentage in different varieties of cotton. In this connexion, the comparison made in Annexure VII, of the outturns per acre of cotton as given in the reports on agricultural farms in certain provinces with those in the forecasts of the cotton crop, may be interesting.

5866. *Returns from Native States.*—Returns are at present received from almost all the Native States where cotton is of any importance, except Kashmir; but they are often found to be faulty. They need a good deal of scrutiny and editing which are not done at present. It may be worth while to state here that a third of India's cotton is produced in the Native States. The point was raised in the last Chiefs' Conference and it was recognised that there should be a closer co-operation than hitherto, between the Native States Durbars and the Department of Statistics, with a view to improving the returns, and that forms with clear instructions for filling them in should be issued in the local vernaculars.

5867. *Counting of bolls.*—It may be considered whether it is feasible to introduce a system of framing the outturn estimate by counting and examining the number of bolls on plants on sample plots. It is stated in the Report on the Working of the Department of Agriculture in the Central Provinces for 1911-12 that such a system was given in trial in Berar in that year with great success. At first, an estimate was made of the number of villages in each district containing good, average, and bad crop, respectively, and then a number of typical fields was selected from each of these classes and the numbers of buds, flowers and bolls per acre were counted in each of them. As many pickings as possible before the preparation of the returns were taken from each of these fields, and the bolls so picked were weighed and counted. With a due allowance for flowers that failed to set, a sum in proportion gave the amount of cotton that might be expected from fields of the type selected. Mr. Clouston, in his letter of 14th March 1918 says: "This system, which was drawn up in 1912, has since been slightly modified. Instead of classifying the crop as good, medium, and poor, the assistant selects 'average' plots only and carries out his experiments on these. This system has on the whole proved useful but it cannot be regarded as very reliable for the following reasons:—(1) In order to have the figures ready to send to the Commissioner of Settlements by the 1st of December, our agricultural assistants have to complete their experiments in the field by the third week of November, but it is impossible at that time to foretell what percentage of the flowers, buds, and immature bolls is to drop as the result of any rain there may have shortly before that time. (2) It is impossible, moreover, to foresee what the rainfall after that date is to be. Rain in the end of November or early in December stimulates the vegetative growth of the plant, which produces growth of the plant, which produces new flowers and continues to give late pickings as the result." (Vide Annexure VIII.) For the purposes of the preliminary cotton forecasts in Egypt, the Ministry of Agriculture takes into consideration the result of the examination of bolls made shortly before and during the time of picking, from samples received from each cotton district, by the head officers of the Technical and Scientific Division of the Ministry, enabling the correcting of bolls on the plant and a checked estimation of the damage caused to bolls by insect pests. Such a system could be followed only to a very limited extent.

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Department the Directors of the Cotton Trade Association rought up the question at a meeting which I had with them in April 1914. The suggestion was given practical shape in 1915 with regard to all provinces and the all-India forecasts. It was, in that year, arranged in consultation with the Bombay Cotton Trade Association that figures of areas and outturns should be shown according to the various descriptions of cotton as recognised by the trade. The figures for the last three years (1915-16, 1916-17, and 1917-18) as published in the Final General Memorandum are:—

Trade Description.

Descriptions.	Acres (thousands)			Bales of 400 lbs. (thousands)			Yield per acre (lbs.)		
	1915-16	1916-17	1917-18	1915-16	1916-17	1917-18	1915-16	1916-17	1917-18
Oomras—									
Khandesh	1,222	1,510	1,403	340	342	187	111	90	53
Central India . . .	909	1,410	1,454	216	311	116	86	88	32
Barsi and Nagar . .	2,168	3,119	3,015	483	637	471	61	62	52
Berar	2,860	3,118	3,214	830	601	428	116	63	53
Central Provinces . .	1,102	1,284	1,368	276		163	93		47
TOTAL	9,450	10,780	11,054	2,145	1,881	1,365	91	70	40
Dholleras	1,180	2,061	3,309	150	585	660	51	114	86
Bengal-Sind—									
United Provinces . .	834	1,185	1,316	262	309	193	126	104	60
Rajputana	268	115	573	61	172	88	96	166	61
Sind-Punjab	1,089	1,431	2,082	217	419	348	91	117	87
Others	71	72	73	18	17	18	101	94	99
TOTAL	2,262	3,103	4,041	591	917	652	105	118	64
Broach	1,044	1,226	1,348	230	304	315	88	99	93
Coompta-Dharwar . .	1,031	1,385	1,611	231	260	319	90	75	79
Westerns and Northern	1,350	1,563	1,550	172	238	217	51	60	56
Cocanadas	251	275	261	35	48	47	56	70	72
Tinnevellys	568	647	577	84	134	136	59	83	94
Salem (including Cambodias)	281	334	649	32	47	235	46	56	145
Comillas, Burmas, and other sorts.	329	851	378	68	75	89	83	85	94
GRAND TOTAL	17,746	21,745	24,781	3,738	4,480	4,035	84	83	65

The cotton trade asked for a survey or map showing in different colours the tracts growing the above descriptions of cotton. The result has exceeded expectations. No less than 230 firms has in the last few weeks purchased copies and the Cotton Trade Association has decided to purchase 300 copies of the larger map now being printed. It may be noted that, in the above classification, the whole of the crop grown in Hyderabad (His Exalted Highness The Nizam's Dominions) was treated provisionally as "Barsi and Nagar." It has since been ascertained that a large amount of cotton locally named "gaorani" is grown in the Dominions, and is of a type quite distinct from "Barsi and Nagar." A proposal, therefore, is being considered to show Hyderabad cotton into two distinct classes, namely, "Barsi and Nagar" and "Hyderabad-Gaorani." It is also being considered whether the cotton grown in the Punjab instead of being shown wholly as "Sind-Punjab" (as at present), should be classified as "Sind-Punjab" and "Punjab-American," since the latter variety is stated to be now cultivated on an appreciable scale, and the area is steadily extending. There is at present no further proposal regarding a revision of the classification of cotton.

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ANNEXURE I.

AREA AND YIELD OF COTTON IN EACH PROVINCE.

Area (acres).

PROVINCE	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17	1917-18
Bombay (including Native States) (a)	6,211,000	6,469,000	7,534,000	5,786,000	6,826,000	7,323,000	7,706,000	5,005,000	7,037,000	8,227,000
Central Provinces and Berar.	4,176,000	4,107,000	4,487,000	4,648,000	4,403,000	4,764,000	4,708,000	4,061,000	4,402,000	4,582,000
Hyderabad State	2,602,000	3,401,000	3,562,000	3,234,000	2,888,000	3,653,000	3,605,000	2,904,000	3,200,000	3,461,000
Madras (b)	1,576,000	1,569,000	1,873,000	2,878,000	2,414,000	2,725,000	2,115,000	2,061,000	2,168,000	2,592,000
Punjab (including Native States).	1,562,000	1,436,000	1,385,000	1,582,000	1,675,000	2,053,000	1,857,000	902,000	1,163,000	1,709,000
United Provinces (c).	1,592,000	1,241,000	1,347,000	921,000	1,158,000	1,580,000	1,551,000	834,000	1,185,000	1,319,000
Central India States.	978,000	1,068,000	1,349,000	1,400,000	1,314,000	1,426,000	1,510,000	999,000	1,419,000	1,454,000
Rajputana States	383,000	464,000	465,000	263,000	393,000	470,000	421,000	244,000	334,000	435,000
Sind (including Native States).	259,000	214,000	279,000	346,000	226,000	341,000	330,000	161,000	240,000	246,000
Burma	204,000	198,000	167,000	186,000	233,000	290,000	270,000	187,000	223,000	240,000
Mysore	65,000	81,000	101,000	101,000	154,000	93,000	109,000	92,000	126,000	154,000
Bihar and Orissa	(d)	(d)	(d)	88,000	92,000	73,000	70,000	67,000	68,000	69,000
North-West Frontier Province (e).	54,000	32,000	33,000	56,000	56,000	59,000	60,000	26,000	28,000	38,000
Bengal (including Native State) (f).	161,000	166,000	169,000	63,000	51,000	87,000	90,000	88,000	73,000	71,000
Ajmer-Merwara	40,000	39,000	45,000	27,000	50,000	57,000	54,000	23,000	47,000	70,000
Assam	(d)	(d)	(d)	36,000	35,000	33,000	34,000	32,000	32,000	32,000
TOTAL	10,993,000	20,545,000	22,596,000	21,615,000	22,023,000	23,023,000	24,595,000	17,746,000	21,746,000	24,781,000

Yield (bales of 400 lbs. each).

PROVINCE	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17	1917-18
Bombay (including Native States) (a).	1,282,000	1,661,000	1,450,000	695,000	1,520,000	1,614,000	1,773,000	1,051,000	1,646,000	1,571,000
Central Provinces and Berar.	766,000	1,070,000	629,000	913,000	910,000	961,000	1,097,000	1,106,000	691,000	591,000
Hyderabad State	307,000	461,000	293,000	300,000	300,000	400,000	400,000	450,000	500,000	450,000
Madras (b)	162,000	180,000	235,000	335,000	471,000	303,000	245,000	245,000	347,000	568,000
Punjab (including Native States).	324,000	396,000	306,000	241,000	373,000	612,000	466,000	195,000	335,000	271,000
United Provinces (c).	426,000	384,000	348,000	251,000	428,000	481,000	486,000	262,000	399,000	198,000
Central India States.	144,000	221,000	237,000	228,000	206,000	273,000	293,000	216,000	311,000	116,000
Rajputana States	80,000	148,000	143,000	73,000	125,000	152,000	166,000	62,000	128,000	51,000
Sind (including Native States).	101,000	104,000	97,000	124,000	123,000	135,000	116,000	48,000	78,000	67,000
Burma	41,000	32,000	28,000	32,000	46,000	54,000	42,000	27,000	40,000	54,000
Mysore	3,000	6,000	10,000	17,000	19,000	11,000	14,000	14,000	16,000	22,000
Bihar and Orissa	(d)	(d)	(d)	19,000	19,000	17,000	16,000	16,000	16,000	17,000
North-West Frontier Province (e).	12,000	7,000	8,000	12,000	13,000	14,000	14,000	4,000	6,000	10,000
Bengal (including Native State) (f).	35,000	35,000	49,000	25,000	21,000	24,000	34,000	30,000	20,000	19,000
Ajmer-Merwara	9,000	13,000	20,000	12,000	26,000	15,000	15,000	2,000	35,000	14,600
Assam	(d)	(d)	(d)	11,000	10,000	12,000	12,000	10,000	11,000	12,000
TOTAL	3,672,000	4,716,000	3,853,000	3,288,000	4,610,000	5,066,000	5,209,000	3,738,000	4,482,000	4,036,000

(a) Includes also the State of Baroda. Estimates for non-reporting tracts have been added from 1909-10.

(b) Includes Native States.

(c) Includes the Native State of Rampur.

(d) Included under Bengal.

(e) Includes the Tochi and the Kurram Agencies from 1913-14.

(f) Includes Bihar and Orissa and Assam.

Imperial.)

Mr. G. FINDLAY SHERRAN.

[Continued.]

ANNEXURE I—*contd.*

Yield (lbs.) per acre of Cotton.

Province	1907-08	1908-09	1909-10	1910-11, 1911-12	1912-13	1913-14	1914-15	1915-16	1916-17	1917-18
Bombay	58	82	103	79	48	89	88	91	84	76
Central Provinces and Berar	54	73	103	56	79	81	81	93	109	93
Hyderabad State	78	42	54	53	57	42	44	44	61	52
Madræs	43	41	46	59	47	74	45	46	49	63
Punjab	97	83	110	88	61	95	110	105	86	60
United Provinces	73	127	124	103	109	148	122	125	124	69
Central India States	22	59	83	73	65	63	77	77	86	22
Rajputana States	63	62	123	123	111	127	112	124	162	59
Shikhar	28	156	194	159	143	166	158	178	119	110
Tamil	59	89	65	67	69	79	74	62	58	83
Mysore	59	10	53	49	67	49	47	51	61	57
Uttaranchal Pradesh . . . . .	..	..	..	..	86	83	91	91	96	99
North-West Frontier Province	75	89	87	97	86	93	95	93	62	105
Bengal	102	87	84	116	129	165	119	171	156	167
Ajmer-Merwara	93	69	122	174	174	288	195	111	25	89
Assam . . . . .	..	..	..	..	122	114	148	141	125	137
AVERAGE FOR INDIA	57	74	92	69	61	84	81	85	84	65

ANNEXURE II.

PERCENTAGE ESTIMATES OF OUTYRES REPORTED IN SEASON AND CROP REPORTS.

Cotton.

[illegible]

Imperial.]

Mr. G. FINDLAY SHIRRAS.

[Continued.]

ANNEXURE II—contd.

UNITED PROVINCS	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
Gorakhpur . . . . .	..	85	..	..	..	..	..	..	..	75
Basti . . . . .	..	..	..	..	..	..	..	..	..	..
Azamgarh . . . . .	..	25	..	..	..	..	..	..	..	75
Nainital	50	..	..	75	70	60	45	75	90	60
Lucknow	35	..	85	85	85	85	60	90	80	75
Unao	55	55	75	75	50	80	60	75	80	75
Rae Bareilly . . . . .	..	..	..	100	50	85	60	90	80	75
Sitapur	25	85	85	80	85	85	60	90	80	75
Hardoi	50	85	100	80	60	95	50	80	80	75
Kheri . . . . .	..	75	95	95	60	75	50	90	80	75
Fyzabad . . . . .	..	..	..	..	..	..	..	..	80	75
Gonda	45	100	..	..	..	..	..	..	80	75
Bahraich . . . . .	..	..	..	..	..	..	..	..	80	75
Sultanpur . . . . .	..	..	..	..	..	..	..	..	80	75
Partabgarh . . . . .	..	..	..	..	..	..	..	..	80	75
Barabanki . . . . .	..	..	..	..	..	..	..	..	80	75
MEDIAN AVERAGE	50	80	87	80	70	90	60	80	80	75

PUNJAB	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
<i>Irrigated.</i>										
Hissar	75	55	90	50	30	115	75	100	50	85
Rohtak	80	65	75	25	20	75	65	75	80	90
Gurgaon	50	30	110	60	70	90	80	80	75	70
Karnal	90	85	80	80	90	110	100	90	100	95
Ambala	80	90	95	80	65	105	90	90	100	100
Hoshiarpur	60	100	90	95	100	90	85	105	95	105
Jullundur	80	95	95	55	80	100	85	65	60	100
Ludhiana	100	115	100	70	85	120	90	75	75	90
Ferozepore	95	70	90	70	90	100	95	95	60	85
Lahore	80	55	85	65	115	80	85	75	90	100
Amritsar	100	50	75	120	100	115	75	75	100	90
Gurdaspur	100	95	95	95	100	110	100	105	105	105
Sialkot	90	85	90	95	65	125	100	105	100	100
Gujranwala	80	80	95	100	50	120	100	90	60	95
Gujrat	100	75	100	95	75	100	100	75	50	85
Shahpur	90	90	90	90	30	105	110	100	30	85
Montgomery	70	50	55	105	95	115	100	80	70	85
Lyalpur	85	65	100	95	35	100	110	75	50	120
Jhang	110	70	90	95	50	105	110	85	60	100
Multan	75	100	100	70	65	60	75	90	60	100
Muzaffargarh	40	85	110	80	105	75	95	25	60	55
Dera Ghazi Khan	65	75	100	80	80	75	90	80	70	85
MEDIAN AVERAGE	80	77	92	80	77	102	92	82	70	95
<i>Unirrigated</i>										
Hissar	35	40	100	50	..	40	15	85	15	90
Rohtak	20	30	100	15	10	50	60	55	40	65
Gurgaon	5	5	110	60	35	100	60	60	50	50
Karnal	20	55	80	80	30	120	70	70	95	80
Ambala	30	80	90	85	60	90	100	100	95	95
Hoshiarpur	70	90	70	75	90	80	105	115	95	95
Jullundur	70	80	85	40	50	100	60	60	55	90

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Mr. G. FINDLAY SHIRAS.

[Continued.]

ANNEXURE II—contd.

PUNJAB	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
<i>Unirrigated—contd.</i>										
Ludhiana	85	100	100	70	45	115	80	50	60	100
Ferozepore	95	55	80	55	55	80	80	75	60	80
Lahore	35	50	70	55	25	20	60	55	80	100
Amritsar	55	50	75	110	25	100	75	75	90	70
Gurdaspur	90	90	75	70	100	100	85	110	100	100
Sialkot	50	75	80	75	45	100	85	100	90	95
Gujranwala	50	65	85	75	15	80	80	90	60	85
Gujrat	75	75	100	95	75	100	85	50	45	75
Shahpur	80	90	55	80	20	100	100	100	30	100
Montgomery	45	40	50	110	90	50	60	65	50	50
Lyalpur . . . . .	..	..	100	..	..	..	75	50	..	..
Jhang	70	50	75	75	50	100	100	60	..	105
Multan	50	55	80	70	75	45	50	70	60	90
Muzaffargarh	45	80	100	80	100	95	84	25	60	55
Dera Ghazi Khan	85	85	80	85	65	70	105	90	65	70
MEDIAN AVERAGE	50	65	80	75	50	95	80	70	60	90

MADRAS	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
Ganjam	58	66	67	58	67	75	67	67	75	82
Vizagapatam	66	75	75	67	58	75	75	75	77	94
Godavari	78	70	78	58	58	75	68	75	75	95
Kistna	75	58	58	75	67	75	67	75	75	100
Guntur	74	71	70	83	75	75	67	67	75	89
Kurnool	80	80	82	86	75	75	75	81	83	89
Bellary	58	58	75	83	67	75	75	67	75	113
Anantpur	58	50	75	75	67	75	67	50	76	107
Cuddapah	58	66	75	75	75	83	75	67	77	106
Nellore	67	58	33	67	58	67	67	66	72	98
Chingleput . . . . .	..	..	..	..	75	67	..	75	42	69
South Arcot	76	75	79	79	73	75	83	66	75	84
Chittoor . . . . .	..	..	..	58	50	..	75	86	58	103
North Arcot . . . . .	..	..	50	50	58	75	75	67	46	78
Salem	75	67	75	67	67	75	75	67	75	105
Coimbatore	83	75	75	83	83	88	75	92	84	100
Trichinopoly	83	80	83	83	82	81	83	79	85	97
Tanjore	75	75	67	66	67	67	67	67	67	106
Madura	66	67	67	67	67	68	58	66	67	102
Ramnad . . . . .	..	..	75	58	74	62	66	83	67	92
Tinnevely	75	67	67	50	58	67	67	58	58	85
Malabar	83	42	83	83	..	..	..	..	..	108
South Kanara	58	58	58	58	58	58	67	75	75	115
The Nilgiris
MEDIAN AVERAGE	75	67	75	67	67	75	67	67	75	98

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Mr. G. FINDLAY SHIRRAH.

(Continued.)

ANNEXURE II—concld.

CENTRAL PROVINCES AND BEHAR	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
Saugor	66	72	122	116	81	77	66	80	120	85
Damoh	20	77	160	160	160	85	65	80	116	81
Jubbulpur	60	62	115	101	160	78	65	80	80	80
Mandla	60	80	160	160	160	160	60	160	160	160
Seoni	58	55	82	70	160	80	75	160	160	60
Narsaohpur	78	80	150	80	85	60	80	75	85	60
Hoshangabad	45	74	81	84	80	60	68	80	110	60
Nimar	28	87	150	80	80	70	65	80	110	80
Batal	40	75	120	80	80	80	75	160	160	80
Chandwara	87	77	80	80	100	80	80	100	100	60
Wardha	80	80	100	100	100	80	80	80	80	80
Narmada	72	84	80	80	100	100	80	80	80	80
Chalis	41	80	120	80	80	100	80	75	80	80
Phandara	80	80	100	80	100	80	80	80	80	80
Balson	80	80	100	80	100	80	80	80	80	80
Devi	80	80	100	80	100	80	80	80	80	80
Bagri	80	80	100	80	100	80	80	80	80	80
Harwar	80	80	100	80	100	80	80	80	80	80
Alia	80	80	100	80	100	80	80	80	80	80
Amara	80	80	100	80	100	80	80	80	80	80
Deoria	80	80	100	80	100	80	80	80	80	80
Tatani	80	80	100	80	100	80	80	80	80	80
Central Provinces and Behar	80	80	100	80	100	80	80	80	80	80
Grand Total	80	80	100	80	100	80	80	80	80	80

Mr. G. FINDLAY SMITH.

FILE, LETTER or FORM NO. (FIVE)

(1921).

Great town in rich marsh.

[illegible]

Total area to date and estimated outturn.
Date of despatch to taluk office.
Survey numbers of villages for which estimates of areas have been given.
Revenue Inspector's initials.
Taluk Head Accountant's initials.

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MR. G. FINDLAY SHIRAS.

[Continued.]

APPENDIX B TO ANNEXURE III.

TALUK POSTING REGISTER OF FORECAST CROPS.

Arca sown.

Serial number	NAME OF CROP	COTTON					
	DUE AT THE OFFICE OF THE DIRECTOR OF AGRICULTURE, MADRAS, ON	1ST AUGUST (FIRST SOWINGS)	1ST OCTOBER (SECOND SOWINGS)	1ST DECEMBER (FIRST OUTTURN)		1ST FEBRUARY (SECOND OUTTURN)	
	Names of sirkas in the taluk	February to July	February to September	February to November	Estimated outturn in annas	February to January	Estimated outturn in annas
1	2	3	4	5	6	7	8
		Acres	Acres	Acres		Acres	

Total area to date of forecast and estimated outturn.

Date of despatch to the Director of Agriculture.

Percentage of the number of villages for which estimates have been framed to the total number of villages in the taluk.

Taluk Head Accountant's initials.

ANNEXURE IV.

Copy of letter Dis. No. 642, dated the 18th March 1910, from the Director of Agriculture, Madras, to the Board of Revenue (Revenue Settlement, Survey, Land Records and Agriculture), Madras.

Mistake in the cotton outturn reports for the Guntur District.

In reply to Board's reference No. 2260 of 29th September 1909, regarding the discrepancy in the cotton outturn figures in the Guntur District, I have the honour to report as follows:—

2. In his letter of 9th March 1909, the Deputy Director of Agriculture, Northern Division, pointed out that there was a serious discrepancy between the official outturn reports of the cotton crop of the Guntur District and the figures given by the Associated Presses of Guntur.

	Official final outturn report.	Return of Presses.
1907-08	21,060 bales	64,232
1908-09	16,082 „	62,899

The Government estimate thus falls short of the amount of cotton actually baled in Guntur by 43,172 and 46,817 bales for these two years apart from the not inconsiderable amount which is consumed in the villages by hand spinners and weavers, besides what finds its way into the market by other trade channels.

3. The Collector of Guntur, to whom the matter was referred, reported that a scrutiny of the figures of the Guntur presses for the previous six years showed that the normal amount of cotton annually pressed at Guntur might be taken as 60,000 bales of 400 lbs. each. From this total might be deducted 13,421 bales which are the produce of the Nizam's Dominions and the adjacent districts of Kurnool and Nellore. The balance, viz., 46,579 bales might be taken as the produce of 192,520 acres in the Guntur District and 5,365

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Mr. G. FRIDAY SHIRBURN.

[Continued]

acres in the Kistna District. The actual amount by which the official figures fall short of the number of bales actually produced in Guntur is this:—

Year	Bales
1907-08	25,510
1908-09	30,197

4. In his letter of 7th September last, the Collector attributed this error to three causes:—

- (1) The failure of the system under which the Barnam reports the crops. His standard of a normal crop is that a crop would be on hand to be counted to the crop, and not a crop which has not entered from draught, in respect of it.
- (2) The fact that the standard outturn fixed, viz., fifty lbs. of lint per acre, was too low.
- (3) The fact that cotton is as often grown as a mixed crop.

5. Taking the case in order, the inaccuracy of the Barnam's return is a factor which will never be eliminated, whatever the system of reporting may be. It is due to a weakness, first the ineradicable instinct which every cultivator has that it is impudent to tell the whole truth to any official. The Barnam must rely on the honesty of the cultivator, as usually he is not an expert cultivator himself. It is also partly due to the idea which the cultivator has that prices will not be a bad crop is reported.

6. The second cause, that the standard normal yield of fifty lbs. per acre is too low, is a matter which, in the absence of any proof, it is impossible to do. Before reporting to the Board that this rate might continue to be accepted, I consulted the local cotton farmers in Madras and they were not able to suggest any objection, but some of them did not believe in the value of Guntur's cotton. No experiments have been conducted in the Guntur District by the Agricultural Department and, in view of the consensus of local opinion as reported by the Collector, the standard Barnam yield was raised to 75 lbs.

7. The third cause reported by the Collector, the practice of growing cotton as a mixed crop is, I am convinced, the most important source of error. In 1905-06, an experiment was carried out at the Haryana Agricultural Station to test this point. One crop of cotton was sown as a pure crop and on another it was sown in the usual mixed method, one acre of cotton to two acres of *Lerra* (*Scleria Italica*). The yield of the pure cotton was 257 lbs. of lint per acre, while the mixed cotton field gave 242 lbs. Under the existing system of reporting mixed crops, the Barnam would report the mixed crop as one third of an acre of cotton and two thirds of an acre of *Lerra*. Supposing, however, in an optimistic frame of mind, he would credit the crop with two thirds of the increase of the pure cotton over third of an acre (one third of 50 lbs.) or 16 2/3 lbs. of lint per acre (the actual yield at 25 per cent. of lint to *Lappa* was 60 1/2 lbs.). The reason why the mixed crop yield is so much less than the pure crop is that the latter is always sown far too thick, whereas the mixed crop is sown sparsely, after the *Lerra* has been sown, to spread out and develop. The *Lerra* crop is sown too thick, but the plants still grow. Provided the season is moderately favourable, the cotton plants grow well, and *Lerra* is cut, and having ample space and light, as compared with the thick sown pure crop, the plants spread out and yield about as good a crop as if there had been no *Lerra* crop on the ground at all. *Korra*, of course, a surface feeder, and interferes little with the deep-rooted cotton crop, provided that there is enough rain for both.

8. In view of the facts, I wrote to the Collector that it would more nearly represent the true facts if the Barnam were to report a field of three crops as two thirds of an acre of cotton and one third *Korra*. I also asked him what were the usual mixtures sown with cotton in Guntur. His reply, copy of which is submitted for reference, states that a *Lerra* cotton is sown with *Lerra* or *curly*, the favourite mixtures, the Barnam estimates one third of the area as cotton and two thirds as *Lerra* or *curly*, and suggests that it would be better that the Barnam should make no attempt to distribute the area. The mixtures where cotton forms the predominant crop may be *Lerra*, as they are now, as pure cotton. When *gugu* or horse-grass is sown along with cotton, the cotton is sown in every row, and only a little horse-grass or *gugu* is mixed with it in the drill. Other mixed crops may be reported as "mixed crop of cotton." The mixed crops might be converted into corresponding areas of pure cotton according to a percentage to be arrived at by the Agricultural Department. For the present, I would suggest that the outturn for pure crops be taken as 75 lbs. of lint per acre, and a mixed crop converted on the assumption that it will give two thirds of the yield of the pure crop. If the present system is to be continued, this would give less unsatisfactory results than any other.

9. At the same time, in view of the facts now brought to light, I would suggest again that the present system of attempting to give outturn reports should be reconsidered. They are treated with ridicule by the cotton trade, and serve no useful purpose. In paragraph 11 of its proceedings No. 190 of 23rd June 1899, the Board itself remarked that "the Board attaches small importance to the quantitative estimates and is of opinion that attempts to frame such estimates are out of place in official reports on the condition and prospects of the crop." The cotton trade are far better qualified to frame such estimates and it would, the Board considers, suffice if the official report merely stated the area figures and gave a qualitative estimate of the probable yield."

10. This would meet the requirements of the leading firms in Madras. Messrs. Binny & Co. wrote in 1908 "We think that if Government gave the area under cultivation and the condition of the crop it would meet all requirement." Messrs. Dymally & Co. wrote "We attach importance only to the sowing reports. Long experience has taught us that outturn reports are quite unreliable. We are quite unimpressed by the reports of anybody outside the firm. We therefore entirely agree with you that the official outturn forecast may, without disadvantage to anybody, be given up."

ANNEXURE V.

Extracts from the United States Department of Agriculture Circular No. 17—January 20th, 1915, on Government Crop Reports.

Methods of Crop Reporting.

The reports issued by the Bureau of Crop Estimates during the year include data relating to acreages, conditions, yields, supplies, qualities, and values of farm crops, numbers by classes, condition, and values of

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Mr. G. FINDLAY SHIRAS.

[Continued.]

farm animals, etc. The data upon which such estimates are based are obtained through a field service consisting of a corps of paid State field agents and crop specialists and a large body of voluntary crop reporters composed of the following classes: County reporters, township reporters, individual farmers, and several lists of reporters for special inquiries.

The field service consists of trained field agents, one assigned to a single State or group of smaller States which in the aggregate corresponds in area and crop production to one of the larger States, who devote their entire time to the work and who travel throughout their territory during the crop season, personally inspecting crop areas, conferring with State and local authorities, private and commercial agencies, and others interested in crop-reporting work. Each agent supplements his own observation with reports from a corps of selected crop reporters in his territory, who report directly to him and are wholly independent of the regular crop reporters who report directly to the bureau.

In addition to the regular force of State field agents, the bureau has a small force of crop specialists, one or more for each of the important special crops, such as cotton, tobacco, rice, and truck crops, possessing the same qualifications and performing the same duties as the field agents, but devoting their entire time to specializing on the particular crops to which they are assigned and travelling throughout the entire region in which they are grown. These crop specialists also have selected lists of crop correspondents reporting directly to them.

Both the State field agents and the crop specialists are in the classified service and are appointed only upon certification by the Civil Service Commission after a rigid competitive examination. They are selected for their special training and qualifications for the work and as they acquire knowledge and experience, will become recognized authorities in crop production in each State.

There are approximately 2,800 counties of agricultural importance in the United States. In each the department has a principal county reporter who maintains an organization of several assistants. These county reporters are selected with special reference to their qualifications and constitute an efficient branch of the crop reporting service. They make the county the geographical unit of their reports, and, after obtaining data each month from their assistants and supplementing these with information obtained from their own observation and knowledge, report directly to the department at Washington.

In practically all of the townships and voting precincts of the United States in which farming operations are extensively carried on the department has "township" reporters who make their immediate neighbourhood area with which they are personally familiar the geographical basis of reports, which they also send directly to the department each month. There are about 32,000 township reporters.

Finally, at the end of the growing season a large number of individual farmers and planters report on the results of their own individual farming operations during the year; valuable data are also secured from 30,000 mills and elevators.

Because of the specialized nature of the cotton crop, the reports concerning it are handled separately from reports on all other crops. In addition to the regular estimates of the State agents, the cotton crop specialist, and the county and township reporters, the bureau obtains reports on acreage, yields, percentage ginned, etc., from many thousand special reporters who are intimately concerned in the crop, including practically all the ginnings.

Transmission of Reports to Bureau by Correspondents.

Previous to the preparation and issuance of the bureau's reports each month the correspondents of the several classes send their reports separately and independently to the department at Washington.

In order to prevent any possible access to reports which relates to speculative crops, and to render it absolutely impossible for premature information to be derived from them, all of the reports from the State field agents, as well as those from the crop specialists, are sent to the Secretary of Agriculture in specially prepared envelopes. By an arrangement with the postal authorities, these envelopes are delivered to the Secretary of Agriculture in sealed mail pouches. These pouches are opened only by the Secretary or Assistant Secretary, and the reports, with seals unbroken, are immediately placed in a safe in the Secretary's office, where they remain sealed until the morning of the day on which the bureau report is issued, when they are delivered to the statistician by the Secretary or the Assistant Secretary. The combination for opening the safe in which such documents are kept is known only to the Secretary and the Assistant Secretary of Agriculture. Reports from field agents and crop specialists residing at points more than 500 miles from Washington are sent by telegraph in cipher. The reports from the county correspondents, township correspondents and other voluntary crop reporters are sent to the Chief of the Bureau of Crop Estimates by mail in sealed envelopes.

Preparation of Reports.

The reports received by the department from the different classes of individual correspondents are tabulated and compiled and the figure for each separate State computed. After the reports from the different counties are tabulated, a true weighted figure for the State is secured by taking into consideration the relative value which the total acreage or production of each county in the State bears to the total acreage or production of the State. The weight figure showing the value of the county is applied to the acreage, yield per acre, or condition, whichever it may be, and from the totals of the weights and the extensions a weighted average for the State is ascertained. The averages for the speculative crops (corn, wheat, oats, and cotton) are determined by computers who do not know the particular State to which their figures relate.

The work of making the final crop estimates each month culminates at sessions of the crop reporting board, composed of five members, presided over by the statistician and chief of bureau as chairman, whose services are brought into requisition each crop-reporting day from among statisticians and officials of the bureau, and field agents and crop specialists who are called to Washington for the purpose.

The personnel of the board is changed each month. The meetings are held in the office of the statistician, which is kept locked during sessions, no one being allowed to enter or leave the room or the bureau, and all telephones being disconnected.

When the board has assembled, reports and telegrams regarding speculative crops from field agents and crop specialists, which have been placed unopened in a safe in the office of the Secretary of Agriculture, are delivered by the Secretary, opened, and tabulated; and the figures, by States, from the several classes of correspondents and agents relating to all crops dealt with are tabulated in convenient parallel columns; the board is thus provided with several separate estimates covering each State and each separate crop, made independently by the respective classes of correspondents and agents, each reporting for a territory or geographical unit with which he is thoroughly familiar.

Imperial.]

Mr. G. FINDLAY SHIRRAS.

[Continued.]

Abstracts of the weather condition reports in relation to the different crops, by States, are also prepared from the weekly bulletins of the Weather Bureau. With all these data before the board, each individual member computes independently, on a separate sheet or final computation slip, his own estimate of the acreage, condition, or yield of each crop, or of the number, condition, etc., of farm animals, for each State separately. These results are then compared and discussed by the board under the supervision of the chairman, and the final figures for each State are decided upon.

The estimates by States as finally determined by the board are weighted by acreage or other figures representing the relative importance of the crop in the respective States, the result for the United States being a true weighted average for each subject.

Method of Issuing Reports.

Reports in relation to cotton, after being prepared by the crop reporting board and personally approved by the Secretary of Agriculture, are issued on or about the first day of each month during the growing season, and reports relating to the principal farm crops and live stock about the seventh or eighth day of each month. In order that the information contained in these reports may be made available simultaneously throughout the entire United States, they are handed, at an announced hour on report days, to all applicants and to the Western Union Telegraph Company and the Postal Telegraph Cable Company, which have branch offices in the Department of Agriculture, for transmission to the exchanges and to the press. These companies have reserved their lines at the designated time, and forward immediately the figures of most interest. A multi-graph statement, containing such estimates of condition or actual production, together with the corresponding estimates of former years for comparative purposes, is prepared and mailed immediately to newspaper publications.

The crop estimates for the State and for the United States as a whole are telegraphed immediately to the Weather Bureau station director of each State, in whose office copies are printed and mailed to all the local papers in the State, so that the crop estimates of the bureau are published throughout the United States within 24 hours of their issuance.

Promptly after the issuing of the report, it, together with other statistical information of value to the farmer and the country at large, is published in the *Agricultural Outlook*, a publication of the Bureau of Crop Estimates, under the authority of the Secretary of Agriculture. An edition of over 225,000 copies is distributed to the correspondents and other interested parties throughout the United States each month.

Basis of Crop Estimates.

Acreage Estimates.

For many years, in fact since the bureau was organized in 1862, it has been the practice to accept the estimates of acreage planted to different crops as reported by the Bureau of the Census every ten years.* Then, in the first year following the census, the crop reporters of this bureau would estimate the acreage planted as a percentage of the acreage reported by the census for the preceding year; the second year following the census the acreage would be estimated as a percentage of the acreage estimated the preceding year, and so on until figures for the next census are available. Theoretically, if there is no bias or tendency to underestimate or overestimate on the part of crop reporters, the acreage estimate by this method for the tenth year after a census would agree with the acreage reported by the census for that year. A weak point in the system which has long been recognized is the fact that individual crop reports are not free from bias, and there appears to be a fairly uniform tendency to either overestimate or underestimate the acreage, the result being a cumulative error which in ten years is apt to result in a wide discrepancy between the estimates of this bureau and the figures of the census. To illustrate, if the Bureau of the Census should report 10,000,000 acres planted to a given crop, and there should be a uniform tendency on the part of the crop reporters of this bureau to underestimate the acreage of this crop an average of two per cent. annually, this bureau might estimate the acreage as 9,800,000 acres the first year after the census, as 9,604,000 acres the second year, as 9,412,000 acres the third year, and so on until the tenth year, when the bureau's estimate for the crop would be 8,170,000. If during the ten-year period there had actually been no change in the acreage planted to the particular crop in question, and the census should again report an acreage of 10,000,000, the result would be a manifest discrepancy of 1,830,000 acres between the figures of this bureau and those of the census. Further discrepancies would appear in the yield per acre and the total yield.

At or near the close of harvest each year, agents and crop reporters of the bureau estimate the yield per acre, in bushels, pounds, or tons, according to the nature of the product. The estimate of the total production is readily obtained by multiplying the yield per acre thus obtained by the previously estimated total number of acres.

It will be observed that the method of estimating the yield per acre differs materially from the method of estimating the total acreage, the acreage estimate being based upon a percentage of the preceding year's acreage, thus carrying on, from year to year, any error made in any previous year, whereas the yield-per-acre estimate, being based upon the one year and not referring to any former year, is not affected by any error of a previous year. A constant yearly under-estimate, of say, two per cent. in the acreage will be magnified to a difference of about ten per cent. in five years and twenty per cent. (approximately) in ten years. A constant yearly underestimate of two per cent. in the yield per acre will not be magnified in five or ten years, but, on the other hand, in comparing one year's estimated yield with another the errors will be neutralized; that is, the effect would be the same, so far as comparative value is concerned, as though no error had occurred. In short, biased errors in acreage estimates by percentage grow from year to year; biased errors in yield-per-acre estimates neutralize each other.

The Bureau of the Census enumerates total acres and total production of crops; if yield per acre is wanted it is obtained by dividing the production by the acres. The Bureau of Crop Estimates obtains directly from its agents and correspondents estimates of acreage (as described) and yield per acre and arrives at the total production.

of procedure; the estimates of yield per acre obtained by the Bureau of Crop Estimates in census years and the figures of yield per acre obtained by the census, with few exceptions, do not vary widely.

* Prior to 1880 the census did not show acreage of crops—merely production; hence, in the earlier years, the acreage basis was obtained by dividing the census report of total production by an estimated yield per acre.

Imperial.]

Mr. G. FINDLAY SMITH.

[Continued]

ANNEXURE VI.

Forms for collection of information from non-official reports in the United Provinces.

FIRST FORECAST OF COTTON.

پیشبندی اول فصل کپاس بابت ماہ جولائی سنہ ۱۹۱۶ء بابت ضلع

(نقشہ مذا تاریخ ۳۱ - جولائی ۱۹۱۶ء تک دفتر ڈائری میں سرور زاپس آجاتا چاہیے)

English translation of questions.	حالات فصل کپاس	حصہ ضلع جسکی بابت کیفیت مذا مرتب کی گئی
	- حالات	
(1) Did the rain fall in time or come late?	۱ - بارش آپ کے حلقہ میں وقت پر شروع ہوئی یا بچھل کر؟	
2. State the date at which the sowing of the crop began, and whether it was early, normal or late.	۲ - عموماً تخمبزی کس تاریخ سے شروع ہوئی اور کیا تخمبزی وقت پر یا اس سے پہلے یا بچھل کر شروع ہوئی -	
3. How did the seed germinate?	۳ - تخم کیسا جما؟	
4. What was the state of rains during July?	۴ - ماہ جولائی میں بارش کیسی ہوئی؟	
5. Has proper weeding been done or did the rains interfere with it?	۵ - نکلی اچھی طرح ہوئی یا بارش سے کوئی عرج واقع ہوا؟	
6. Does the cotton area this year exceed or fall short of last year's area? If less, by what per cent? If more, by what per cent? State also the cause of the increase or decrease.	۶ - سال حال میں جو رقبہ بویا گیا ہے وہ رقبہ سال گذشتہ سے آپ کے انداز میں کم ہے یا زیادہ - اگر کم ہے تو فیہ دی کس قدر؟ اور اگر زیادہ ہے تو فیصدی کس قدر؟ رقبہ میں کمی یا بیشی کا تخمینہ ہوشیاری سے بہت تحقیقات کے کرنا چاہیئے اور بمقابلہ سال گذشتہ کے جو کمی یا بیشی ہو اسکی وجہ لہنا چاہیئے -	
موضع	دستخط	ضلع
	تاریخ	

THE UNIVERSITY OF CHICAGO

THE UNIVERSITY OF CHICAGO

THE UNIVERSITY OF CHICAGO

THE UNIVERSITY OF CHICAGO

THE UNIVERSITY OF CHICAGO

[Imperial.

Mr. G. FINDLAY SMITH.

[Continued.

SECOND FORECAST OF COTTON.

پیشبینی دوم فصل کپاس بابت ماہ ستمبر سنہ ۱۹۱۶ء بابت ضلع

نقشہ ہذا دفتر ڈائری میں تاریخ ۲۵ - ستمبر سنہ ۱۹۱۶ء تک ضرور آنا چاہیے ۔

حالات فصل کپاس		حصہ ضلع جسکی بابت کیفیت ہذا مرتب کی گئی
English translation of queries.	سوالات Queries (Urdu).	
1. Was the rain heavy in August and September or scanty ?	۱ - ماہ - اگست و ستمبر میں کثرت سے بارش ہوئی یا کم ؟	
2. What effect had the rains on the present crop ?	۲ - بارش کا فصل ہذا پر کیا ہوا ؟	
3. How was weeding done in August and September ?	۳ - اگست و ستمبر میں کیسی ہولی ؟	
4. Did anything injurious occur to cotton flowers ?	۴ - پھولوں کو کس وجہ سے نقصان تو نہ پہونچا ؟	
5. Have the cotton pods appeared in your circle, and if so, what is the state ?	۵ - آپ کے علاقہ میں ٹائیدی یا ٹینٹ ابھی شروع ہوئی یا نہیں اور اگر نمود ہوئی تو اسکی کیا حالت ہے ؟	
6. What is the state of the cotton crop ? If 16 annas represent a normal* crop, what outturn is expected this year ?	۶ - فصل کپاس کی حالت اب کیسی ہے اگر معمولی فصل ۱۶ آنہ قرار دیجائے تو آپ کی دانست میں اس سال کئی آنہ ہوگی ؟	
<div>دستخط</div> <div>موقع</div> <div>ضلع</div>		

* معمولی فصل سے وہ فصل مراد ہے - جسکی اس سال پیدا ہونے کی امید موجودہ حالات میں ہو اگر بارش اور موسم اس طرح کے ہوں جو اس طبقہ آراضی کے واسطے عام طور پر ہوا کرتے ہیں یعنی نہ بہت موافق ہوں نہ خلاف

* Normal crop means the crop which in existing circumstances might be expected to be attained in the year if the rainfall and seasons were of a character ordinary for the tract under consideration, that is neither very favourable nor the reverse.

[Imperial.]

Mr. G. FINDLAY SHIRRAS.

صیغہ پیکت پوست ایرنگ

بکار سرکار

بمقام لکھنؤ

بخدمت دائرکتر صاحب محکمہ کاغذات دیہی و زراعت سرانجام متحد، آگرہ و اردہ

ضلع

سائن

نام رپورٹ کنندہ

[English.]

Mr. G. FINELAY SMITH.

[Continued.]

Statement of area under cotton.

District	Tahsil	Pargana.	نقشہ رقبہ کیپاس باہت حلقہ	پرگنہ	تحصیل	ضلع
				سنہ ۱۳ فصلی		
			Cotton.	رقبہ کیپاس		
			Cotton Ahar.	رقبہ کیپاس مع اہر		
			Total.	مجموعہ		
				مجموعہ	نقشہ رقبہ	ضلع

ہدایات

(۱) سال گذشتہ کا رقبہ کیپاس و کیپاس مع اہر، قبل سے رجسٹرڈ، دائرہ کو سے حاصل کر لینا چاہیئے۔ رجسٹرار قانون کو چاہیئے کہ ایسا ایک نقشہ تیار کرے جس میں ہر پٹواری کے حلقہ کا رقبہ و رقبہ منگرو جدا جدا لکھا گیا ہو تاکہ اگر کسی حلقہ کا رقبہ سال حال میں بتایا جائے تو اس کا رقبہ سال گذشتہ سے باہت بعد ۲ میوزن سے خارج کیا جائے۔

(۲) اگر اس نقشہ کے بھیجنے کے وقت کسی پٹواری کے باغذات اس قدر نامکمل ہوں کہ رقبہ زیر نشت کیپاس و کیپاس مع اہر نہ معلوم ہو سکے تو اس کے باغذات میں تکمیل کا انتظار نہ کر بلکہ بغیر اس پٹواری کے حلقہ کا رقبہ درج کیلئے ہوئے یہ نقشہ بھیج دے۔ لیکن اس امر کی ذہانت ملحوظ کرنی چاہیئے کہ جس حلقہ کا رقبہ نہ دریافت ہو سکے اس کا رقبہ سال گذشتہ میوزن سے خارج کر دیا جائے تاکہ دونوں دونوں کے رقبہ کا متبادل کرے میں دیکھا نہ ہو۔

(۳) یہ نقشہ ہر سال ۲۷ - ستمبر کو دیا اگر ممکن ہو تو اس کے قبل صاحب دائرہ کو بہادر کے دفتر میں بمقام لکھنؤ ضرور بالضرر بذریعہ ڈاک روانہ کر دیا جائے کسی حالت میں تاخیر نہ ہونی چاہیئے۔

(۴) نقشہ، اٹھانے کا پتہ پست پر درج ہے۔ یہ نقشہ وہ کرے بیعت کی شکل میں بنادیا جائے اور یہ اہل نام، پتہ و تاریخ لکھ دے۔ اگر سرکاری ٹکٹ آسانی سے ہم نہ پہنچ سکے تو

Imperial.]

Mr. G. FINDLAY SHIRRAS.

[Continued.

بکار رگار

صیغہ پیکت پوسٹ

بمقام لکھنؤ

!خدمت سب دائرکتر بہادر محکمہ کاغذات دیہی زراعت صوبجات متحدہ آگرہ و اودھہ

نام کردار و اتوبیو

م تحصیل

ضلع

Imperial.]

Mr. G. FINDLAY SHIRRAS.

[Continued.]

بصیغہ پیکٹ پوسٹ بیرون

نمار سرکار

بمقام لکھنؤ

بخدمت ڈائریکٹر صاحب محکمہ کثدات دیہی و زراعت صوبجات متحدہ آگرہ و اردھہ

ضلع

ساکن

نام رپورٹ کنندہ

Imperial.]

Mr. G. FINDLAY SHERRAS.

[Continue

NORMAL OUTTURN OF COTTON (CLEANED) PER ACRE.

نقشہ اوسط معمولی پیداوار فی ایکڑ روئی ممالک متحدہ کے ارن اضلاع میں
جہاں فصل کپاس خامکر بوئی جاتی ہی

نام ضلع	پیداوار روئی فی ایکڑ	
	آپاشی شدہ	غیر آپاشی شدہ
سہارنپور	۶۰	۶۰
مظفرنگر	۷۰	۱۰۰
میرٹھہ	۷۰	۱۰۰
بلدشہر	۶۵	۱۰۰
علی گڑھ	۶۵	۱۰۰
متھرا	۷۵	۱۱۵
آگرہ	۷۵	۱۱۵
میں پوری	۸۰	۱۱۵
ایٹھ	۸۰	۱۱۵
بریلی	۶۰	۷۷
بجپور	۶۰	۷۷
بدایون	۶۰	۷۷
مراد آباد	۶۰	۷۷
فرخ آباد	۸۰	۱۱۵
اٹارہ	۸۰	۱۱۵
کانپور	۶۰	۷۷
متھیر	۶۰	۷۷
الہ آباد	۶۰	۷۷
جھانسی	۶۰	۷۷
جالون	۶۰	۷۷
همیرپور	۶۰	۷۷
باندہ	۶۰	۷۷
فیاضی نال	۵۵	۷۷
انار	۵۵	۷۷
مردوئی	۵۵	۷۷

Imperial.]

Mr. G. FINDLAY SHIRAS.

[Continued.]

THIRD FORECAST OF COTTON.

پیشبینی سوم فصل کپاس بابت ماہ نومبر سنہ ۱۹۱۶ء بابت ضلع

{ نقشہ عذا دفتر ڈائری میں تاریخ ۲۰ نومبر سنہ ۱۹۱۶ء تک ضرور اجانا جائیگا
 { اردام نوپسندہ اور پتہ ماہ ماہ لہنا چاہیگا

English translation of questions.	حوالات فصل کپاس	حدہ ضلع جیسی ہاےست کعبت عذا مرتب کی گئی
1. How did the rains, which fell after the second forecast report, affect the cotton crop?	۱۔ دوسری پیشبینی کے بعد بارش آپ کے حلقہ میں کیسی ہوئی اور کپاس کو اس سے کیا نفع یا نقصان ہوا؟	
2. On what dates was the cotton picking begun in your circle, and whether it was early, normal or late?	۲۔ آپ کے حلقہ میں پائی کپاس کی کس تاریخ کو شروع ہوئی اور آیا بغالی امسال وقت پر یا اس سے پہلے یا پچھل کر شروع ہوئی؟	
3. Did anything injurious occur to cotton flowers?	۳۔ کوئی ایسی بات تو نہیں ہوئی جس کی وجہ سے پھولوں کو نقصان پہنچا؟	
4. What is the condition of the strength of cotton fibres, of its length and cleanliness, this year?	۴۔ پیداوار امسال کیسی ہوئی یعنی روئی کے تار معانی لبالی اور مضبوطی میں کسے ہیں؟	
5. What is the final estimate of the outturn of cotton? If 16 annas represent a normal* crop, what outturn is expected this year? In framing this estimate you should keep in view the standard of outturn of cotton per acre of your district which is given on the reverse of this form.	۵۔ آپکا آخری تخمینہ پیداوار کا کیا ہے؟ یہی اگر معمولی فصل ہو کہ آٹھ اقرار دیجئے تو امسال کی آٹھ کی فصل ہوگی؟ تخمینہ کر کے میں آپے ضلع کے معمولی اوسط پیداواری ایکڑ کا لحاظ رکھنیگا جو کہ نقشہ عذا کی پشت پر درج ہے	
دستخط		
موضع		
ضلع		
تاریخ		

* معمولی فصل سے وہ فصل مراد ہے جس کی اس سال پیدا ہونے کی امید موجودہ حالات میں ہو اگر بارش اور موسم اس طرح کے ہوں جو اس طبقہ اراضی کے واسطے عام طور پر ہوا کرتے ہیں یعنی نہ بہت مرائق نہ خلاف ۔

* Normal crop means the crop which in existing circumstances might be expected to be attained in the year if the rainfall and seasons were of a character ordinary for the tract under consideration, that is neither very favourable nor the reverse.

Imperial.]

Mr. G. FINDLAY SHIRRAS.

[Continued.]

ANNEXURE VIII.

Letter No. 1085, dated Nagpur, the 14th March 1918, from D. Clouston, Esq., M.A., B.Sc., Officiating Director of Agriculture, Central Provinces, to the Director of Statistics, Calcutta.

I HAVE the honour to attach herewith a copy of the instructions issued for the guidance of the Agricultural Assistants on whom we depend to collect information for the preparation of the cotton forecast. This system, which was drawn up in 1912, has since been slightly modified. Instead of classifying the crop as good, medium and poor, the assistant selects "average" plots only and carries out his experiments on these. This system has on the whole proved useful, but it cannot be regarded as very reliable for the following reasons:—

- (1) In order to have the figures ready to send to the Commissioner of Settlements by the 1st of December, our Agricultural Assistants have to complete their experiments in the field by the 3rd week of November, but it is impossible at that time to foretell what percentage of the flowers, buds and immature bolls is to drop as the result of any rain there may have been shortly before that time.
- (2) It is impossible, moreover, to foresee what the rainfall after that date is to be. Rain in the end of November or early in December stimulates the vegetative growth of the plant which produces growth of the plant which produces new flowers and continues to give late pickings as the result.

ENCLOSURE.

Memorandum from the Department of Agriculture, Central Provinces and Berar, Nagpur, dated the 15th August 1912.

Will you arrange to send me the first cotton forecast on the 10th November? As was done last year you will select a village in each tahsil in which the cotton crop as a whole is apparently equal to that of the average field in the tahsil. You will inspect all the cotton fields of the village and in your mind's eye classify the crop thereon as good, medium and poor, each representing one-third of the total area under cotton in the village. Measure with the chain a plot of one-tenth acre in each. The tenth of an acre in the 'good crop' should be representative of the one-third of the whole cotton area classed in your mind's eye as being good. Similar precautions should be taken in selecting a medium and poor plot. You will get the assistance of the patwari in laying out these plots.

Count the number of bolls, flowers and buds on ten average plants just before the first picking and find what the outturn per acre should be on the assumption that the weight of the bolls is the same as last year. If from 120,000 bolls, flowers and buds, as counted on a medium plot just before the first picking last year you got an outturn of, say 300 lbs., and only 80,000 this year from a similar medium plot, you would naturally conclude that if the bolls are the same size as those of last year the outturn should this year be $\frac{300 \times 80,000}{120,000}$ or 200 lbs. (kaps). But this outturn should next be corrected in the light of the information you have obtained by getting the weight of the bolls. Take the weight in tolas as was done last year. If 100 bolls weighed nine tolas last year and ten tolas this season, $\frac{200 \times 10}{9}$ or 222½ lbs. would be the corrected weight.

There are other corrections to be made as we gain experience. We want information as to the number of buds, flowers and immature bolls which drop and the extent to which this is due to climatic conditions. We want, too, to ascertain how many buds form and mature into bolls after the 10th November: this information can be obtained if we count the number of bolls, flowers and buds just before each picking.

Part II.

MEMORANDUM ON THE PREPARATION AND IMPROVEMENT OF COTTON PRESS RETURNS.

5871. *Preamble.*—The object of this memorandum is to bring out certain facts relating to the preparation and publication of the statistics of the half-monthly cotton press returns instituted in 1914, and to offer suggestions for the improvement of these returns.

5872. *Usefulness of the cotton press returns.*—The statistics presented in these returns relate to the quantity of cotton handled by presses and mills, and are, therefore, very useful not only as a means to check the estimates of outturn given in the cotton forecast, but also to assist the cotton trade with up-to-date information regarding the amount of cotton available from time to time in the market. Unfortunately, the returns are not as one would like them to be. An examination has been made in this Department of these returns for the complete season 1916-17 (September 1916 to August 1917), and the results are stated below.

5873. *Incompleteness of the returns as at present submitted.*—In Annexures I and II will be found the amount of cotton pressed in the pressing factories and of unpressed cotton received in the spinning mills in each British Province and Native State during the year 1916-17 (year ending August). It will be seen that the total quantity thus handled fell short of the estimated outturn of cotton crop of the season 1916-17, in the British Provinces (including Native States within provincial boundaries), by 789,000 bales and, in the Native States (outside provincial boundaries, namely, Hyderabad, Central India, Rajputana and Mysore), by 851,000 bales of 400 lbs each. That is to say, even on the assumption that the forecast was correct, which

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Mr. G. FINDLAY SHIRRAS.

[Continued.]

It is really not, the cotton press returns were at least incomplete to the extent stated above. This is shown from the following summary table :—

PROVINCES	Revised estimate of cotton crop in 1916-17	Quantity of cotton pressed in pressing factories and of unpressed cotton received in spinning mills up to 31st August 1917	Increase + or Decrease — in column 3 over column 2
1	2	3	4
	Bales of 400 lbs.	Bales of 400 lbs.	Bales of 400 lbs.
Bombay (including Native States and Baroda)	1,646,000	935,297	—710,703
Central Provinces and Berar (including Native States)	691,000	715,123	+24,123
Madras	347,000	383,930	+36,930
Punjab (including Native States)	341,000	182,665	—158,335
North-West Frontier Province			
Delhi			
United Provinces	309,000	264,807	—44,193
Sind	78,000	55,050	—22,950
Burma	40,000	40,048	+48
Bengal	47,000	104,099	+57,099
Bihar and Orissa			
Assam			
Ajmer-Merwara	48,000	75,937	+27,937
TOTAL	3,547,000	2,757,876	—789,124
Native States—			
Hyderabad	500,000	7,721	—492,279
Central India	311,000	35,112	—275,888
Rajputana	128,000	46,686	—81,314
Mysore	16,000	14,102	—1,898
TOTAL	955,000	103,621	—851,379

(2) It is not practicable accurately to judge the incompleteness of the returns, province by province since presses and mills in one province bring cotton from another province according to their convenience and requirements. This is especially the case in provinces like Bengal, Ajmer-Merwara, and Delhi, where the production of cotton is not sufficient to meet the requirements of the local presses and mills. Still, it would appear from the figures that; amongst British Provinces, the returns are most incomplete in Bombay and Sind, Punjab, and the United Provinces.

(3) A question arose sometime ago as to whether the wide margin of difference between the estimate of outturn, as given in the cotton forecast, and the quantity handled by presses and mills, as given in the cotton press returns, may not be partly due to overestimation of the outturn in the cotton forecast. My personal opinion all along is that the cotton forecasts, as all forecasts generally, are underestimated. It would also appear from the statistics of exports and consumption given below that the forecast estimate of the season 1916-17 was underestimated by about 135,000 bales, although stocks brought forward from the previous crop and stocks carried over to the next season have been left out of consideration owing to want of data.

	Bales of 400 lbs.
Net exports of cotton by sea from September 1916 to August 1917	2,092,000
Consumption of cotton in mills in India during the same period	1,705,000
Extra mill consumption (conventional estimate made by the Bombay Cotton Trade Association)	750,000
TOTAL	4,637,000
Forecast estimate for the season 1916-17 (as published in the Final General Memorandum on the cotton crop of 1917-18)	4,502,000
DEFICIT	135,000

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[Continued.]

In this connexion, Mr. Keatinge's opinion may be quoted : He says " I have no reason to suppose that the forecast was overestimated. Such is seldom the case." The Director of Land Records and Agriculture, United Provinces, however, said in his letter No. 1598, dated the 20th June, 1917, that the cotton forecast of his province for the season 1916-17 was overestimated by about 47,000 bales. But this is perhaps an exceptional case, and the quantity is very small ; and this would increase the difference between the trade estimate and the forecast estimate to over 180,000 bales in place of 135,000 bales shown above. It would thus strengthen the contention that the forecast estimate for all-India was underestimated. The cotton press and mill returns are, therefore, still more incomplete than they appear from Annexures I and II.

5874. *Suggestions for improvement of returns (I) Native States.*—It being proved that the cotton press and mill returns so far received are incomplete, it may now be considered what steps can be taken to improve these returns. First, with regard to Native States. The collection of returns from the presses and mills in the States of Hyderabad, Central India, Rajputana, and Mysore, was undertaken by the Bombay Chamber of Commerce. With the exception of perhaps Mysore, the returns relating to other States are incomplete, as will be seen from Annexure II, and no satisfactory settlement could be made on this point with the Bombay Chamber of Commerce. The Cotton Trade Association, Bombay, was then approached for their views as to whether in their opinion the incompleteness of returns from Native States was unimportant and whether the present system should continue. In reply the Secretary of the Association said " the whole return as issued at present is so incomplete as to be absolutely valueless and even misleading the return might well be discontinued unless some arrangement can be made to obtain complete and reliable figures both from British Provinces and Native States."

(2) A proposal to get returns of presses and mills in Native States through the State authorities instead of through the Bombay Chamber of Commerce was placed before the Chiefs' Conference held in the month of November, 1917. The proposal was considered by a Select Committee, and they were of opinion that the Darbars should be invited to supply the returns, but for the present a quarterly return should suffice.

5875. (ii) *British Provinces.*—Next with regard to British Provinces. An enquiry was made of the provincial Directors of Land Records or Agriculture in the important cotton-growing provinces in British India as to their opinion on the views of the Bombay Cotton Trade Association and as to what check, if any, is made in the local offices for obtaining returns from each of the presses and mills that are actually working. The replies received show, that, as regards completeness of press and mill returns, they are not on the whole satisfactory except in the Central Provinces and Berar and also in Madras. Mr. Boyd, Director of Land Records, Punjab, said " I agree that the present system is not satisfactory but unless presses are compelled by law to send in returns, I see little prospect of improvement The Factories Act is of little use, because most of the presses are exempt from its provisions." Mr. Keatinge, Director of Agriculture, Bombay, pointed out " our letters and reminders often remain unanswered," and again, " many of the mills and presses did not submit returns of the cotton pressed or used by them. I have no hold whatever over the mills and presses anywhere, least of all in Native States from which the returns are the most defective Under the circumstances, I can only agree that the returns are useless and had better be discontinued, unless it is proposed to legislate to enforce the submission of such returns and to employ a staff to see that they are sent both in British India and in Native States." Mr. Hailey, Director of Land Records and Agriculture, United Provinces, said " a certain number (of mills) have refused to send us any returns at all and the figures are quite useless. There has been considerable correspondence on the subject but, as the managers' objections have not been overcome, the returns remain entirely incomplete. I should, of course, prefer the submission of the returns (of presses) to be made obligatory Some of the figures appear difficult to reconcile with the period the press was known to be working." In his evidence before the Cotton Committee on November 1, 1917, Mr. Hailey while alluding to the fact that a reasonable amount of accuracy has been secured in the estimation of cotton forecasts, said " it would, however, greatly assist matters if baling presses were compelled by legislation to submit their returns."

(2) In August last while on tour, I discussed this question with the local authorities at Lyallpur, the most important cotton district in the Punjab ; and they were of opinion that in order to get complete press returns, presses should be licensed and that every press owner should be compelled by law to furnish a return showing the quantity of cotton pressed in every fortnight. I also discussed the question at a meeting specially arranged with the Directors of the Cotton Trade Association, Bombay. The Directors suggested that a system of licensing all ginning and pressing factories should be instituted in British Provinces and that the system might, at a later date, be introduced with beneficial results in Native States. It may be noted, in this connexion that an Act authorising the Director of Census, United States of America, to collect and publish statistics of cotton was passed on July 12th, 1912. Under this Act, owners or agents of all cotton ginneries, manufacturing establishments, etc., are compelled on pain of heavy fines to furnish reliable statistics of the cotton ginned and consumed. A copy of the above Act will be found in Annexure III. The Directors of the Cotton Trade Association also suggested that the Department of Statistics should employ a staff of travelling auditors to collect figures from presses, mills, railways, etc. The figures thus collected might be published quarterly, and would thus afford a valuable check on the fortnightly returns, which latter would be extremely useful, if reliable, but which could be dispensed with in favour of, say, quarterly returns, if the difficulties in connexion with the collection of accurate figures fortnightly could not be overcome.

5876. *Forms of the returns.*—The present forms of cotton press and mill returns (Annexure IV, Tables I and II) show a column stating the total number of presses or mills in the provinces and States and another column stating the number of presses or mills for which returns have been received in the half-month. It has been pointed out by the Director of Agriculture and Industries, Central Provinces, that these two columns are misleading without a third column showing the total number of mills or presses which did not work during the half-month, as they often give a wrong impression of incompleteness of returns, since all the presses and mills do not work every half-month, especially where " pools " or " combines " prevail. The Director of Land Records and Agriculture, United Provinces, is also of the same opinion. It would, therefore, be well if another column were inserted in each of the Tables I and II in Annexure IV showing the number of presses or mills which were closed or working in the half-month of report.

(2) In February, 1916, provincial authorities preparing cotton press returns in each province were asked for their opinion as to whether weekly returns, as prevailing in Madras, should be substituted for fortnightly returns for the sake of uniformity in all the provinces. All the provinces with the exception of the Punjab and Delhi objected to the proposal. The United Provinces and Bombay Directors even suggested that monthly returns would be more convenient. It is, therefore, for consideration whether monthly returns should be substituted for the existing half-monthly returns, so as to relieve the local authorities of the difficulty

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[Continued.]

of getting half-monthly returns in due time. It might be mentioned, in this connexion, that ginning returns are published periodically in the United States of America between September and March, a copy of which will be found in Annexure V.

(3) The periodical ginning returns in the United States of America are published in postcard form. In January, 1916, the Secretary of the International Federation of Master Cotton Spinners' and Manufacturers' Association brought to notice that cotton press returns in the United States of America were published in postcard form in order to save some time and postage. The Tables I, II and III of the Cotton Press Returns published by this Department cannot be printed on a postcard. Moreover, the forms in which the returns are at present issued are found useful both by the trade and by the provincial authorities for checking the completeness of press and mill returns and also the estimates of outturn of cotton forecasts, and therefore cannot, at present, be done away with. A monthly statement similar to the periodical ginning returns of the United States of America, or a quarterly abstract table showing totals (as in Table III) might be printed on postcards and issued separately, in addition to the present detailed returns, whether they be issued half-monthly or monthly in future.

5877. *Survey of purposes.*—Briefly, the proposals are :—

- (a) The introduction of a system of licensing the cotton presses in British India on the lines of the Act in the United States of America, referred to in paragraph above so as to compel the press owners by law to submit returns, and if this system succeeds, Native States authorities might be invited, later on, to introduce it in their States. The Local Governments or their officers responsible for the collecting of the returns from presses should be authorised to issue licenses in consultation with representatives of the trade. I do not think, on the whole, an official or semi-official body in Bombay should be entrusted with the licensing of gins and presses throughout India.
- (b) The Bombay Chamber of Commerce should be certainly relieved of the duty of collecting returns from presses and mills in Native States, and the returns should be procured by the respective States authorities, as decided at the Chiefs' Conference.
- (c) Addition of a column in the present form of cotton press returns showing the number of ^{presses} _{mills} closed or working during the half-month.
- (d) Substitution of monthly returns in place of the existing half-monthly returns, if necessary. (The quarterly returns proposed to be furnished by Native States—*vide* paragraph above—might be appended to the returns for British Provinces at intervals of three months.)
- (e) Publication of a monthly or quarterly abstract table on postcards on the United States model.

ANNEXURE I.

Total quantity of cotton pressed in the Pressing Factories and of unpressed cotton received in the Spinning Mills, from 1st September, 1916, to 31st August, 1917, in British Provinces (including Native States within provincial boundaries) and Native States.

BRITISH PROVINCES.

PROVINCES	Total estimated out-turn of cotton crop in the year 1916-17. (Bales of 400 lbs. each)	Quantity of cotton pressed up to 31st August, 1917. (Bales of 400 lbs. each)	Quantity of unpressed cotton received in spinning mills up to 31st August 1917. (Bales of 400 lbs. each)	Total of columns 3 and 4 (Bales of 400 lbs. each)	Percentage ratio of column 5 to column 2
1	2	3	4	5	6
Bombay (including Native States) and Baroda.	1,646,000	630,090	305,207	935,297	56.8
Central Provinces and Berar (including Native States).	691,000	669,885	45,238	715,123	103.5
Madras	347,000	366,835	17,095	383,930	110.6
Punjab (including Native States)	341,000	168,027	16,638	182,665	53.6
North-West Frontier Province, Delhi					
United Provinces	309,000	245,136	19,671	261,807	85.7
Sind	78,000	55,050	..	55,050	70.6
Burma	40,000	40,018	..	40,018	100.1
Bengal	47,000	11,630	93,369	104,999	223.4
Bihar and Orissa					
Assam					
Ajmer-Merwara	48,000	33,083	42,874	75,957	158.2
TOTAL	3,517,000	2,217,784	516,092	2,757,876	77.8

Imperial.]

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[Continued.

Total quantity of cotton pressed in the Pressing Factorics and of unpressed cotton received in the Spinning Mills, from 1st September, 1916, to 31st August, 1917, in British Provinces (including Native States with n provin- cial boundaries) and Native States—contd.

NATIVE STATES.

PROVINCES.	Total esti- mated out- turn of cotton crop in the year 1916-17. (Bales of 400 lbs. each)	Quantity of cotton pressed up to 31st August, 1917. (Bales of 400 lbs. each)	Quantity of unpressed cotton received in spinning mills up to 31st August 1917. (Bales of 400 lbs. each)	Total of columns 3 and 4 (Bales of 400 lbs. each)	Percentage ratio of column 5 to column 2
1	2	3	4	5	6
Hyderabad	500,000	3,541	4,180	7,721	1.5
Central India	311,000	..	35,112	35,112	11.3
Rajputana	128,000	46,686	..	46,686	36.5
Mysore	16,000	12,490	1,612	14,102	88.1
TOTAL .	955,000	62,717	40,904	103,621	10.9

NOTE.—Revised since the issue of the return for the half-month ending 31st August, 1917. The outturn figures are those given in the Final General Memorandum of the Cotton Crop of 1917-18 issued on February, 18, 1918.

ANNEXURE II.

Public Laws of the United States of America—62nd Congress, 1911-13

Chapter 249.—An Act Authorizing the Director of the Census to collect and publish statistics of cotton. July 22, 1912 (H. R. 19403)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled. That the Director of the Census be, and is hereby, authorised and directed to collect and publish statistics concerning the amount of cotton ginned; the quantity of raw cotton consumed in manufacturing establishments of every character; the quantity of baled cotton on hand; the number of active consuming cotton spindles; and the quantity of cotton imported and exported, with the country of origin and destination.

Section 2.—That the statistics of the quantity of cotton ginned shall show the quantity ginned from each crop prior to September first, September twenty-fifth, October eighteenth, November first, November four- teenth, December first, December thirteenth, January first, January sixteenth, and March first, and shall be published as soon as possible after these respective dates. The quantity of cotton consumed in manu- facturing establishments, the quantity of baled cotton on hand, the number of active consuming cotton spin- dles, and the statistics of cotton imported and exported shall relate to each calendar month, and shall be published as soon as possible after the close of the month. Each report published by the Bureau of the Census of the quantity of cotton ginned shall carry with it the latest available statistics concerning the quantity of cotton consumed, stocks of baled cotton on hand, the number of cotton-consuming spindles, and the quantity of cotton imported and exported. All of these publications containing statistics of cotton shall be mailed by the Director of the Census to all cotton ginners, cotton manufacturers, and cotton warehouse men, and to all daily newspapers throughout the United States. The Director of the Census shall furnish to the Bureau of Statistics of the Department of Agriculture, immediately prior to the publication of each report of that Bureau regarding the cotton crop, the latest available statistics hereinbefore mentioned, and the said Bureau of Statistics shall publish the same in connexion with each of its reports concerning cotton.

Section 3.—That the information furnished by any individual establishment under the provisions of this Act shall be considered as strictly confidential and shall be used only for the statistical purpose for which it is supplied. Any employee of the Bureau of the Census, who, without the written authority of the Director of the Census, shall publish or communicate any information given into his possession by reason of his employ- ment under the provisions of this Act shall be guilty of a misdemeanor and shall, upon conviction thereof, be fined not less than three hundred dollars or more than one thousand dollars or imprisoned for a period of not exceeding one year, or both so fined and in prisoned, at the discretion of the Court.

July 22, 1912 (Public, No. 237.) Cotton statistics, Director of Census to collect and publish, specified. Cotton ginned. Periods. Monthly reports of other statistics. Detail. Distribution of publications. Publication by Agri- cultural Department with crop reports. Information considered confidential. Punishment for divulging by employ- ees.

Imperial.]

Mr. G. FREDERICK SHERRAN.

[Continued.]

Information
to be fur-
nished by
canneries, etc.

Punishment
for willful
refusal, etc.

Completion
of informa-
tion from
foreign
countries.
Abstract to
be published
with reports.
Former laws
repealed.
Vol. 52,
p. 591;
Vol. 53,
p. 1282;
Vol. 55,
p. 1168.

Section 1. That it shall be the duty of every owner, president, treasurer, secretary, director or other officer or agent of any cotton ginnery, manufacturing establishment, warehouse, or other place where cotton is ginned, manufactured, or stored, whether conducted as a corporation, firm, limited partnership, or by individuals, when requested by the Director of the Census or by any special agent or other employee of the Bureau of the Census acting under the instructions of said Director, to furnish completely and correctly, to the best of his knowledge, all of the information concerning the quantity of cotton ginned, consumed or on hand, and the number of cotton consuming spindles. The request of the Director of the Census for information concerning the quantity of cotton ginned or consumed, stocks of cotton on hand, and number of spindles may be made in writing or by a written representative, and if made in writing shall be forwarded by registered mail, and the registry receipt of the Post Office Department shall be accepted as evidence of such demand. Any owner, president, treasurer, secretary, director or other officer or agent of any cotton ginnery, manufacturing establishment, warehouse, or other place where cotton is ginned or stored, who, under the conditions hereinafore stated, shall refuse or willfully neglect to furnish any of the information herein provided for or shall willfully give answers that are false shall be guilty of a misdemeanor and, upon conviction thereof, shall be fined not less than three hundred dollars or more than one thousand dollars or imprisoned for a period of not exceeding one year, or both so fined and imprisoned at the discretion of the court.

Section 5. That in addition to the information regarding cotton in the United States hereinbefore provided for, the Director of the Census shall compile by correspondence or the use of published reports and documents, any available information concerning the production, consumption, and stocks of cotton in foreign countries, and the number of cotton consuming spindles in such countries. Each report published by the Bureau of the Census regarding cotton shall contain an abstract of the latest available information obtained under the provision of this section, and the Director of the Census shall furnish the same to the Department of Agriculture for publication in connection with the reports of that Department concerning cotton in the same manner as in the case of statistics relating to the United States.

Section 6. That the joint resolution authorizing the Director of the Census to collect and publish additional statistics, approved February ninth, nineteen hundred and five, and the joint resolution approved March second, nineteen hundred and nine, and all other laws and parts of laws inconsistent with the provisions of this Act are hereby repealed.

Approved July 22, 1912.

ANNEXURE IV.

FORM OF COTTON PRESS RETURNS.

I.—Cotton Press Return for India in the half-month ending—(Season from 1st September to 31st August)

Province or State	Total cotton pressed in the half-month (bales of 400 lbs each)	Percentage to total for the half-month	Total number of presses in the Province or State	Number of presses for which returns have been received for the half-month	Quantity of cotton pressed in the half-month (bales of 400 lbs each)	TOTAL QUANTITY PREPRESSED FROM 1ST SEPTEMBER TO (Bales of 400 lbs each)	
						Current year	Previous year
1	2	3	4	5	6	7	8
Bombay (including Native States) and Baroda							
Central Provinces and Berar (including Native States)							
Madras							
Punjab (including Native States)							
United Provinces							
Sind							
Burma							
Bihar and Orissa							
Bengal							
Assam							
North-West Frontier Province							
Ajmer-Merwara							
Delhi							
TOTAL BRITISH PROVINCES							
Hyderabad							
Central India							
Rajputana							
Mysore							
TOTAL NATIVE STATES							
GRAND TOTAL							

Imperial.]

Mr. G. FINDLAY SHERRAS.

[Continued.]

II.—Return of Cotton received in the Mills in India in the half-month ending—(Season from 1st September to 31st August)

Province or State	Total number of mills in the Province or State	Number of mills for which returns have been received for the half-month	Quantity of cotton received in the half-month (bales of 400 lbs each)	TOTAL QUANTITY RECEIVED FROM 1st SEPTEMBER TO	
				Current year	Previous year
1	2	3	4	5	6
Bombay (including Native States) and Baroda					
Central Provinces and Berar (including Native States)					
Madras					
Punjab					
United Provinces					
Sind					
Bengal					
Ajmer-Merwara					
D.D.D.					
TOTAL BRITISH PROVINCES					
Hyderabad					
Central India					
Rajputana					
Mysore					
TOTAL NATIVE STATES					
GRAND TOTAL					

Note.—This statement shows the quantity of *unpressed* cotton received in the mills, the quantity of pressed cotton coming through the presses not being taken into account, as this is included in statement I.

III.—Total quantity of cotton pressed in the Pressing Factories and of unpressed cotton received in the Spinning Mills, in British Provinces (including Native States within provincial boundaries)

Province	Total estimated outturn of cotton crop (bales of 400 lbs each)	Quantity of cotton pressed up to (bales of 400 lbs each)	Quantity of unpressed cotton received in spinning mills up to (bales of 400 lbs each)	Total of columns 3 and 4 (bales of 400 lbs each)	Percentage ratio of column 5 to column 2
1	2	3	4	5	6
Bombay (including Native States) and Baroda					
Central Provinces and Berar (including Native States)					
Madras					
Punjab (including Native States)					
North-West Frontier Province					
D.D.D.					
United Provinces					
Sind					
Burma					
Bengal					
Bihar and Orissa					
Azam					
Ajmer-Merwara					
TOTAL					

Note.—This table gives the totals of the quantities of cotton pressed in the Pressing Factories and of unpressed cotton received in the Spinning Mills, in British Provinces, including Native States within provincial boundaries, in the half-month ending 31st August, 1901.

Imperial.)

Mr. G. FENDLAY SHERRA.

[Continued.]

ANNEXURE V.

Copy of a Ginning Return Published in the United States.

PRELIMINARY REPORT.

DEPARTMENT OF COMMERCE

BUREAU OF THE CENSUS.

SAMUEL L. ROBERT, Director.

Washington, D. C., January 2, 1918.

REPORT ON COTTON GINNING.

A detailed report of the cotton ginning of 1917 prior to January 1, 1918, and comparative statistics of the cotton ginning of 1917 and 1916, crops of 1916 and 1915, and the percent of the crop of each year ginned prior to January 1.

RUNNING BALES
(Counting round as half bales and excluding linters)

STATE	GINNED PRIOR TO JANUARY 1		CROP			PER CENT OF CROP GINNED PRIOR TO JANUARY 1	
	1916	1917	1916	1916	1915	1917	1916
United States	10,420,491	11,032,491	10,636,775	11,351,915	11,004,173	97.1	96.1
Alabama	483,016	540,661	1,007,130	552,679	1,025,419	97.9	98.2
Arkansas	12,748	5,776	1,415	7,125	1,925	81.1	75.1
Arkansas	228,445	1,000,500	733,180	1,102,671	780,383	96.2	95.4
California	57,295	28,237	23,283	42,661	23,589	61.7	71.3
Florida	40,553	50,254	54,687	50,979	55,354	93.6	95.8
Georgia	1,744,500	1,810,934	1,800,771	1,852,104	1,937,730	97.9	98.4
Idaho	605,937	435,437	332,428	441,121	536,813	95.7	95.7
Illinois	800,712	775,452	884,813	830,109	925,309	96.9	98.0
Illinois	40,730	35,727	43,475	60,166	46,644	92.2	93.2
North Carolina	545,523	642,816	635,978	637,612	737,354	92.7	94.4
Oklahoma	884,820	728,761	561,950	813,419	622,176	98.2	90.3
South Carolina	1,146,224	922,152	1,133,596	970,702	1,174,213	95.0	96.5
Tennessee	200,210	257,020	281,879	378,071	206,222	94.4	95.2
Texas	2,007,947	2,223,915	2,035,707	3,562,780	3,008,852	95.9	95.7
Virginia	16,273	23,192	15,079	27,975	17,357	93.6	92.2
All other States	3,784	5,880	4,297	6,295	5,037	88.8	85.3

The statistics in this report include 184,510 round bales for 1918; 188,052 for 1917; and 105,785 for 1916. The number of sea island bales included is 86,813 for 1918; 113,313 for 1917, and 88,933 for 1916. The distribution of sea island for 1918, by States, is: Florida, 36,119; Georgia, 41,748; and South Carolina, 5,946.

The statistics for this report for 1918 are subject to slight corrections when checked against the individual returns of the ginners being transmitted by mail. The corrected statistics of the quantity of cotton ginned this season prior to December 13, are 10,134,704 bales.

CONSUMPTION, STOCKS, IMPORTS, AND EXPORTS—UNITED STATES.

Cotton consumed during the month of November, 1917, amounted to 590,763 bales. Cotton on hand in consuming establishments on November 30 was 1,408,327 bales, and in public storage and at compresses 3,715,185 bales. The number of active consuming cotton spindles for the month was 33,604,659. The total imports for the month of November, 1917, were 7,038 bales, and the exports of domestic cotton, including linters, were 418,685 bales.

WORLD STATISTICS.

The world's production of commercial cotton, exclusive of linters, grown in 1916, as compiled from published reports, documents, and correspondence, was approximately 18,365,000 bales of 500 pounds net while the consumption of cotton (exclusive of linters in the United States) for the year ending July 31, 1917, was approximately 20,180,000 bales of 500 pounds net. The total number of producing cotton spindles, both active and idle, is about 150,000,000.

Imperial.]

Mr. G. FINDLAY SHIRRAS.

[Continued.]

Mr. G. FINDLAY SHIRRAS called and examined.

5878. (President.) With the permission of the Committee I wish to confine my remarks entirely to the statistical side of work, the preparation and improvement of cotton forecasts, the improvement of cotton press returns, and the publication of the prices of cotton at up-country markets. I have no direct control over the local compiling officers. The returns received from the provinces have been considerably changed by me during the last four years. When the Department was created in 1914, I went to Bombay to consult the Bombay Cotton Trade Association as to the method which we should follow in publishing information as to cotton, the general idea being to specialise as far as possible in regard to the information which the trade requires. The trade pointed out very strongly that the forecasts were, in some years, 20 to 25 per cent. wrong, whereas, in the case of American forecasts, the difference between the estimate and the actual figure was about one to two, sometimes three per cent. So what I have done recently is, when the returns come into the office, to have the outturn figures compared with those for the previous year and with the outturns for the same areas over a long period of years, and also with the figures for the neighbouring areas, in order to ascertain whether these are *prima facie* absurd or not. I think it would be better if we had a Crop Reporting Board as in America. Last year, the forecast from Sind showed the outturn as 48,000 bales and the Director merely remarked that he thought it was more. He did not raise the figures. He said that the district estimates appeared to be somewhat low and that he thought the crop was considerably larger than what the district outturns indicated. What I did was to study the weekly reports of rainfall statistics and the outturn for good, bad, and indifferent years for over twenty years. I came to the conclusion that, all things considered, the estimated outturn per acre was absurd and so I raised it to a figure which gave a result of nearly 67,000 bales for the whole area. A few days ago, a large firm wrote to say that their Punjab and Sind figures were almost identical with ours. Another case is Hyderabad from which I got a final return of nearly eight lakhs of bales from the districts. When sending up his estimates, the Director said that he did not think that it would be more than four lakhs—I am speaking from memory—just about half. I looked into the previous year's figures and into the crop report and I raised it to 4½ lakhs. If we had people like Mr. Stuart, the Director of Agriculture, Madras, who would take an interest in the actual return, the compilation of cotton forecasts would not be difficult; but when we get Directors of Agriculture who look to the statistical side of the work as merely secondary and regard the information required by the trade as subsidiary, what can I do?

5879. My general idea is that I should have more expert assistance, following the practice in the United States. There is need for greater concatenation. This I have dealt with at some length in my Memorandum on the Cotton Forecast which I have put in. I consider there should be a Central Crop Reporting Board. I should like to have on it a cotton specialist, and one or two of the Directors of Agriculture of the major provinces, who would go over the returns before I published them. I could either publish them at Bombay or Delhi. I suggested informally to Mr. Mant, the Secretary of the Revenue and Agricultural Department, Government of India, that he might be the *ex-officio* President of the Crop Reporting Board. The difficulty about this was that my headquarters are in Calcutta while Mr. Mant's are at Delhi during the crop forecasting season. I have described in my written evidence the American system of crop reporting. The American crop reporting service consists of trained men. We are utilising the provincial Agricultural Departments, e.g., for our intermediate telegraphic reports on the condition of the wheat crop, and their estimates are very useful. I found at Lyallpur that the Principal of the Agricultural College could give the outturn of a field merely by looking at it. You cannot expect a revenue agency to do that. If I get an absolutely correct figure for the previous year's total outturn, then it is not hard to arrive at a fair estimate of the present year's outturn but expert advice would be very useful in checking the figures, reported by the revenue agency. What we ought then to have is a Crop Reporting Board on which experts would sit. The district figures could be sent through the Directors of Agriculture who would send them on with their remarks or we could get the sub-district returns separately. In Madras, the Board of Revenue does not allow the district officers to touch the figures at all, since the personal element enters into the question very largely. As the cotton crop is so important, I am quite prepared to have special attention given to the crop reports for cotton as in America, and in Egypt. We cannot expect to have the advanced system of the United States but we might make a beginning. The objection to the United States system is that it would mean an enormous staff. Probably we should have to start very slowly; people will give us information every month regarding the main classes of cotton and how they are getting on—information such as is published by the American Bureau every month. That would mean a considerable staff. If we have experts, they might be useful as Inspectors. They might be people who could carry out any special enquiry or control any special work. The trade everywhere accepts our area figures, but it discards our outturn figures. This year I have discarded the whole of the outturn figures for Central India and Rajputana, but I do not think that one officer ought to take that on himself. I have been in Central India and I know how little reliance can be placed on the figures of outturn.

5880. There is also that snag of the normal crop which militates against the outturn figures being correct. You will find it very rare that any district reports a normal crop. Mr. Low told me that when he was Directors of Agriculture and Industries, he could count on his fingers the number of officers who would report a crop as 110 or above. Either we might do as they do in Madras, i.e., leave the reporting agency as it is, and when they report 75, consider it as meaning 100 and have the figures corrected accordingly in my office or in the office of the Director of Agriculture or in some other Central Office. This system must not be done in any haphazard way but as described in paragraph 5862 of my written evidence. Unless you pick your average figure carefully and have that average verified and corrected year after year, you cannot arrive at accurate calculations.

5881. I do not find that the trade pays considerable attention to the cotton figures in the forecast, but that they pay special attention to the area figures, whereas they have their own reports weekly as to outturn. The trade is keen on the cotton forecast, for example, I have it on my file that, when the Secretary to the Department of Commerce and Industry went to Bombay, they complained to him that they had been led astray by a forecast which was twenty per cent. wrong. I was present at a meeting in Karachi at which it was stated that more cotton had been exported by one firm from Karachi than the whole outturn estimated in the Sind cotton forecast. I wrote to Mr. Keatinge about it, pointing out that the forecast was not correct and that though the area figure might be correct, the outturn figure was wrong. He has told me over and over again that he wants a special statistical staff and that he cannot do the work with his present staff which is over-worked. That is, of course, an important point.

Imperial.)

Mr. G. FINDLAY SHERRAH.

{Continued.

5882. As regards the date of the publication of the forecasts, I have dealt with the subject in para. 5868 of my written evidence with special reference to the Madras crop. As to the present difficulty experienced by Madras, I think we can meet them. We could either issue the final forecast a month later than at present or issue a fifth or supplementary report in April.

5883. (Mr. Madan.) To enable us to give complete figures for Madras, the date of the forecast would have to be a month later than at present, or a fifth or supplementary report in April would have to be undertaken. I must get the returns by the 10th March or April.

5884. In regard to cotton, I pay very great attention to the season and crop reports which are ready by September or October. These give finally adjusted figures of the previous year and I know then what exactly the crop in each British province was. I now write to the local Directors enquiring whether the figures supplied by them are their actual figures. I take the mill consumption, and the extra-factory consumption and the exports, and see how my forecast runs. For forecasts, I would have a proper reporting agency but I would go slowly. I would take the present revenue agency (*galuaris*, etc.), but I would have more intelligence at the top and more inspection of the returns as they come in. I mean more scrutiny and care by superior officers. It is a sort of half-way house to the American ideal. The special staff in the United States is an ideal which I should very much like to see eventually in India, but I am afraid that the Government of India could not let it go to action if now as it would be too expensive.

5885. In my office, there are eighty men, of whom only about half a dozen are in the Agricultural Section. I have got a very good man at the top, as head of the section, besides a Superintendent who supervises the section with certain other returns. In America they have a proper estimating department which has a very big staff. A very large sum is voted by Congress for special experts on cotton, for crop reporting, etc. Their field service consists of trained field agents. If I had an adequate staff, I could turn out as good results as other countries. My Department deals not only with all forecasts but also with the sea-borne trade statistics; it deals with the foreign and inland trade, and also with statistics on prices and wages, and also with financial and commercial, judicial and administrative statistics. There are ten sections. One section deals, as already explained, with the agricultural statistics of British India and also with those of Native States, in addition to the crop forecasts and the cotton price returns. The staff of this section is about half a dozen men, two of whom are very well educated capable men. The question of the staff would depend upon whether you are going to make the central statistical office of India responsible for the forecast, that is to say, whether over 200 cotton growing district reports from the British provinces would be sent direct to my office, a copy only going to the local Director of Agriculture who would give his estimate as well. Native States (the reports from which sometimes come to me direct) are to put more complete returns than formerly, as was agreed upon at the Conference of Ruling Chiefs in Delhi in November, 1917. If we are going to have all the work of the cotton forecasts done by the Cotton Crop Reporting Board, which will issue the forecast from Bombay or Calcutta, or Delhi or Calcutta, and relieve Local Governments of a certain amount of the work, I should then require a larger staff than if I merely continued to work on collecting and publishing the figures received from Local Governments. My personal opinion is that I should like a Crop Reporting Board of which the Secretary to the Government of India in the Revenue and Agricultural Department, or the Director of Statistics with the Government of India, might be President, and the other members might be a cotton specialist and one or two Directors of Agriculture. After obtaining the returns from the provinces and from some of the big firms, the Board would issue the forecast on a specified date and at a specified time.

5886. It is absolutely necessary to improve the present system, but I am afraid we could not have *en bloc* the huge American staff of reporters. We should start on the lines I have suggested, but at the same time, Local Governments should also deal with the subject as at present. I should like to have their primary reporting agency (*i.e.*, sub-district) reports, as well as the Directors' reports, all sent direct to the Central Statistical Office. If that were done, the big firms would supply their figures confidentially as well, provided their figures were put into a safe and not until the day the forecast was published, as is the case in America. I am quite prepared to make a special experiment of this nature for cotton, and perhaps for wheat, but I would like to start with cotton. As to what would happen if we had a Crop Reporting Board in such a case as that which occurred at the end of October last year, when heavy rains came and the position of cotton which had up till then been very good was completely changed, the Crop Reporting Board would certainly have been able to keep the trade informed of the change effected. I should not be opposed to monthly cotton reports as in America. It would be published at once and made available to the trade quickly. If I had people in the provinces going about and reporting to me in cipher, I could then tell the trade within 24 hours the latest information regarding cotton. If the trade likes, we could issue a fortnightly statement. If the reports came direct to the Board instead of through Local Governments, I could issue a monthly report. I am already issuing monthly reports for wheat so long as the war lasts.

5887. For acreage, I depend entirely on the provincial revenue agency. If I get any thing above ten per cent. difference, I make always enquiries from the Directors of Agriculture. Mr. Stuart in Madras started a very good system by which he found whether all the Revenue Inspectors and *Iarnams* (village accountants) in the *taluk* were reporting or not. The danger is that the primary reporting agency may not give the complete figures. That is the thing about which one has to be careful. The reporting system could certainly be improved if we had people going about and noting and reporting condition of the crops. I don't want the Agricultural Department to do it entirely at the cost of their other important work. I should, however, like to see a system of reports from selected officers. Their chief work is the development of agriculture and not statistics. When I want help direct from the Agricultural Department I can always get it by writing semi-officially. There is, however, no real system in vogue by which we utilise that Department in the way we should. As regards the area, it rests on the land revenue system. I am quite content with the acreage figures and do not suggest any improvement in regard to them. I would leave the acreage figures as they are. In the case of mixed crops, the present system is to divide up the area in the proportion in which the constituent crops of the mixture are sown or in the proportion of the number of rows of each crop. In the United Provinces, however, they calculate the acreage from the estimates of the outturn in regard to oil-seeds but not, I am glad to say, for cotton. The question of mixed crops is an extraordinarily difficult one, and I would not lay down any hard and fast rule now. I have tried very hard to devise a general system for the whole of India and have not been able to do so up to the present.

5888. In regard to unofficial cases, my agricultural section is a sort of a branch of the Revenue and Agricultural Department. I send the papers with my suggestions to the Revenue and Agricultural Department from which they sometimes go to the Agricultural Adviser, who notes on them. If the

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Mr. G. FINDLAY SHIRRAS.

[Continued.]

Revenue and Agricultural Department agrees, instructions are issued to Local Governments accordingly.

5889. As to the anna valuation, I discussed it with Sir Reginald Craddock, when I was in Burma. He said that he could never get a sixteen anna crop reported. The great drawback in our present system is that no one will ever give you a proper forecast of outturn in terms of the normal. They will never report a full crop. A crop is almost always under-estimated. In America, they take 100 as what they call a full crop. In America, there is no hesitation in reporting 75 or 80 per cent. crop, because they know 100 is the full super-normal crop, as it is not in India, and if any mistake were made the Crop Reporting Board would notice this at once. Local Governments have been consulted and the general consensus of opinion is that under-estimating is general throughout India. That being so we shall either have to make the full crop 100 or to raise the *karnam's* figures by taking ten years average as proposed by Mr. Stuart. If Mr. Stuart's proposal is accepted, you need not disturb the local reporting agency, but it is a question which requires very careful consideration, before any decision is arrived at.

5890. It might save a lot of trouble if returns of *kapas* were sent in and converted to lint figures in my office, since *tahsildars*, etc., do not know much about ginning percentages and therefore about the outturn of lint. If we did this, it would prevent a lot of wrong conversions taking place before the cotton return left the district. I had a case of this kind recently. I got a return of ginned (cleaned) cotton from Ajmer-Merwara of about 400 lbs. per acre. I pointed out the mistake to the Commissioner of Ajmer-Merwara and the figure was corrected to 300 lbs. per acre. When any return of outturn has to be submitted to my office, or to the Director of Land Records and Agriculture, or to the Local Government, it should be submitted in *kapas*. All estimate should be sent in *kapas* and not in lint.

5891. The areas under each class of cotton in each province are now given separately and we should be able to arrive at the lint figures from the outturn of *kapas* and the ginning percentage. I have always kept Sind separate, as its cotton is different. As time goes on, we shall improve that.

5892. With regard to the co-operation of Native States, I have already said that, at the last Conference of Ruling Chiefs, the Chiefs were unanimous on the point, and cordially agreed to give us figures. We have no means of checking the figures, but the question will be considered by the Darbars and ourselves.

5893. (*Mr. Hodgkinson.*) I don't think the figures from Native States are as reliable, and as pointed out in my written evidence (paragraphs 5866), one-third of the total area under cotton is in Native States. The policy of the Government of India up to last year had been to leave Native States out entirely and not to ask them for returns, but now the States themselves see that it is in their own interest to send in their cotton figures and I hope to see a very great improvement within the next four or five years. As to how the returns from Native States can be made more accurate, that is a matter which is for the consideration of the Ruling Princes. Sending out instructions in the vernacular for the preparation of the forecast would be of very great assistance. I did that in the case of the cattle census and it is working extraordinarily well. I feel sure that it could be done with cotton. Printed forms for filling up might also be sent out. The position seems to be that unless you can get accurate figures from the Native States, it will not be much good. That is the difficulty.

5894. (*Mr. Roberts.*) There has been a great improvement in accuracy in the forecast during the last few years. That is what I have been told. The Department of Statistics has, since I have been Director, paid great attention to the forecasting of cotton. It entails a lot of going about. I have told Government recently that I ought to tour more and that, unless I get hold of the local people and discuss matters personally with the Directors of Agriculture, it will not be possible for me to carry out the improvements that the Government of India desire. It is really one of the most important parts of the duties of the Director of Statistics to tour regularly and systematically and keep in close touch with the trade, Directors of Agriculture, etc.

5895. As regards crop cutting experiments, we find it much better to get the Agricultural Departments to do the crop cutting experiments. It is not satisfactory to ask busy *tahsildars*, etc., to do them. The Agricultural Department knows how to estimate the outturn for a district which has various kinds of soils. I would make the Agricultural officer responsible for the figure of outturn. In Burma, the results of crop cutting experiments conducted by district officers are not trustworthy and are therefore not used for estimating outturn in crop forecasts, for which purpose the figure ascertained by settlement officers are utilised. The outturns have been very considerably raised this year by the Settlement Commissioner on the basis of the Settlement Reports. I think we ought also to have, as in England, typical plots and to watch the crop there from year to year. It should be carried on from year to year. It is done on some of the farms for instance, at Cawnpore on wheat, and for comparative purposes it is of some interest. I would like to see that information used from year to year as a check on the forecast for the economic circle in which the experimental farms are situated.

5896. In some of the provinces the authorities are extremely loth to consult the agricultural experts. There is no systematic method of consulting them as to the probable outturn of crops. We are most anxious to get this part of the work done by the Agricultural Department and developed, but at the same time not so as to encroach too much on the present work of the Agricultural Department with its pressing duties. The Government of India some time ago issued instructions to Local Governments in regard to this. (Circular No. 1242, dated 29th December, 1917).

5897. I am not in favour of a non-official body, such as a Central Board in Bombay, being left to deal with forecasts. Such a Board, however, would be useful in disseminating cotton statistics which we publish and it would be an invaluable assistance to this Department.

5898. As to how far the railway returns are used in checking the cotton press returns, there is only one province in which this has been done. I did it recently for Madras. I went to Madras at the end of last year and as a result of a conference there, we decided to get all the railways carrying Madras cotton to give us the figures each had for cotton. The matter is now in an experimental stage. I also wrote to the Directors of Agriculture about this scheme, but some of them thought that it was not at present worth while. I think some good results could be obtained, especially in Madras, in Burma, and elsewhere.

5899. (*President.*) I am in favour of compulsory submission of press returns. The cotton is ginned in about 1,400 gins throughout India, and it then goes mainly to the presses, a part going also direct to the spinning mills. We take the returns from the presses and the mills. There are 750 presses of which 150 are in Native States and 245 mills, of which 22 are in Native States. I am not only in favour of the submission of compulsory returns in British India, but I hope the Native States will also agree to follow suit. I had a meeting with the Bombay Cotton Trade Association last year and they cordially agreed. At the Chiefs

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absence of a market close to where the cotton is grown, cultivator's indebtedness or their inability to carry the produce to the market) the growers were generally in the hands of the intermediaries who, in some provinces, enter into contracts which bind the cultivator to deliver over his cotton at a price fixed long before the marketing season. Another ground that may be urged against the proposal is that the proposed telegram would not be of much use as it would probably arrive after the day's business was mainly concluded and would not, in any event, cover fluctuations occurring during the day. It is, on the other hand, obvious that in provinces in which the growers are capable of utilising the telegrams it would be beneficial to them, and for the matter of that to India and the world outside, if the growers were supplied with the information, which would help them in securing better prices for their cotton and thus stimulate larger production. The only two provinces which accepted the proposal are the Punjab and Ajmer-Merwara. The Government of the Punjab, on the basis of an interesting report of Mr. W. Roberts, Professor of Agriculture, Lyallpur, on his tour in Egypt, America and Japan, an extract from which is given below, suggested that the Agricultural Officer at Lyallpur should receive Bombay prices daily, and also Liverpool, New York, and New Orleans prices, if possible, and that Lyallpur prices should be posted at outlying markets in the Punjab.

"Egypt is a very small highly developed country with telephone connection from Cairo and Alexandria to all parts of the country. It is a very simple matter, therefore, to put up Alexandria, Liverpool and New York prices in the various markets in the interior and there is no doubt that the system is very useful. In India, the conditions are different and we are not dealing in such a high grade article as Egyptian cotton. I consider, however, that it would be very advisable that the Agricultural Officer at Lyallpur should receive Bombay prices daily, and also Liverpool, New York, and New Orleans prices, if possible."

(2) The question whether agriculturists get fair prices for their cotton and if not, what steps should be taken to secure better prices for them, was also discussed in a conference held at Lyallpur in April 1917, and the conclusion it came to was that the variations in prices the *zamindars* get on the same day in cotton, both *deshi* and American, were so great from place to place that it was evident that they did not conform to any standard and the remedies it recommended were, among others, the following:—(a) Daily publication of the Bombay prices of Broach, Sind-Punjab-American and Sind-Punjab qualities of cotton to be made at various cotton centres in the colonies; (b) Lyallpur prices to be also given to other centres.

(3) The Chief Commissioner, Ajmer-Merwara, was of opinion that although the growers of cotton were, owing to their indebtedness, almost entirely at the mercy of traders, an authorised communication of the Bombay rates would render those cultivators who were not deeply encumbered, less dependent on middlemen and press owners and would increase their chances of securing a fair value. He, therefore, suggested that telegraphic reports of Bombay prices should be sent to Beawar and Kekri, the principal cotton centres in Ajmer-Merwara. As nearly all the cotton in Ajmer-Merwara finds its way to Bombay, the Chief Commissioner thought it unnecessary for any prices other than those prevailing in the Bombay market to be reported.

(4) With the permission of the Government of India, I discussed the suggestions of the Punjab and Ajmer-Merwara referred to above, with the Cotton Trade Association, Bombay, who intimated their willingness to telegraph, on payment, to Lyallpur, Beawar, and Kekri the daily prices of certain grades of Indian and foreign cotton, and the Local Government concerned were asked by the Government of India in October last to make the necessary arrangements in consultation with the Secretary of the Cotton Trade Association.

(5) The beginning thus made in the Punjab and Ajmer-Merwara regarding the publication of cotton prices should perhaps be carefully watched before moving further in the matter.

X.—Bhopal.

Mr. TALIB ALI THAWAR, Manager of the Sultania Cotton Manufacturing Company, Limited, Bhopal.

EXAMINED AT SEHORE, NOVEMBER 1917.

Written statement.

5912. *Suggestions for the improvement of Indian cotton.*—(a) We feel it necessary that the staple yielded from year to year ought to be uniformly good and care should be taken that it does not deteriorate owing to the use of mixed inferior seed.

(b) We recommend that Government may open a cotton farm in each district as a model to be followed by the cultivators and also as a means to educate and advise the cultivators regarding the latest improved methods and economic cultivation of cotton. In this farm only the best seeds, e.g., American and Egyptian seed, may be experimented upon to ascertain how they flourish on the particular soil.

(c) Government should arrange to sell the best seeds to the cultivators at the lowest price, so that the seed merchants may find it impracticable to sell their seeds which are generally inferior. Usually the cultivators who are extremely poor buy seeds from merchants on extortionate terms, i.e., instead of paying for seed in cash, which the poor cultivators are unable to do, they return the value in the form of cotton yielded from the seeds at more than 25 per cent. less than the market price. Government also should sell the seeds on credit to the cultivators to enable them to resist the temptation of dealing with the seed merchants on the above terms.

(d) As a further precautionary measure, the Government may by enactment prohibit the sale of seeds except through the Government farms.

(e) Government may employ a suitable expert in each district who should visit the crop area and advise the cultivators the economic methods of growing better stapled cotton and maintaining uniformity of quality year after year.

(f) The Government farm should aim at making the long stapled cotton more remunerative to the cultivators than the ordinary Indian type. Then only the cultivators will be encouraged to maintain the quality and the staple of cotton.

English]

Mr. M. DAULAT RAI.

(c) If, as a result of adoption of the above suggestion, cultivators throughout the country are induced to grow long staple, I feel that the advantage, if any, will be a great economic advantage to the whole country and more especially to textile industries.

IV. MANUFACTURE.

(a) Ginning and pressing.

5013. (36) Type and number of gins and presses.—We have six single roller gin and one D. Stewart factory for cotton press.

5014. (37) Size of bale.—The size of the bale of 400 lbs. is 4' 3" 17" 16".

5015. (38) Saw gins versus roller gins.—Saw gin is superior to roller gin in outturn, it also takes less power. The saw gin operation is totally different from roller gin, which is fed with cotton by a lattice machine only. The saw gin is fed by hand, while the roller gin is fed by manual labour and the saw gin takes more power than roller gin. The roller gin is used only one single roller gin.

5016. (39) Effect of saw gins on Indian cotton.—Saw gins are generally used in America where there is a cotton gin. It is not used in India because it is not used in India at all. The reason why it is not used is that the cotton gin in India has a short staple and the cotton seed is very stiff so after ginning the seed is not so good as the seed which is attached with cotton seed whilst it is not the case with the roller gin.

5017. (40) Factory labour.—Labour is very cheap but it is increasing more and more as time goes on. All the labourers are getting dearer day by day.

5018. (41) Effect on machinery of replacement of short staple cotton by long staple.—There is no alteration required for ginning and pressing of long staple cotton.

Mr. TATIE AM THAWAN, called and examined.

(Translation.)

5019. I am the Manager of the Bhopal State Pressing Factory in Bhopal. We have 85 gins. They are all single roller gins. The factory is owned by Sir Ratan Bhandulal, but it is worked under the name of Bhopal State Pressing Factory. The State is partner in that Company to the extent of half.

5020. I am trying to grow some American cotton a little bit adjoining the factory. It is an American type, but of what variety, I cannot say. I think the crop of this American variety would be better than the local cotton in some years, but this year, owing to heavy rain, the crop was ruined. I have never grown any before.

5021. The seed which is sold by the pressing factory to the cultivators is very mixed. I therefore recommend that the Government should open seed farms at a great many centres and arrange to collect seed at a rate. The cultivators do not pay for seed in cash. They pay for it in kind. They return the value of the seed in the form of cotton at more than 25 per cent less than the market rate. The price of kapas here varies from Rs. 55 to Rs. 60 per maund of four maunds, i.e., 396 lbs. It is true that real mani here is equal to four maunds of 96 lbs. i.e., 384 lbs. When we buy cotton we buy it on the basis of the maund of 396 lbs. i.e., twelve Pils more than the selling weight.

5022. I have recommended in my evidence that Government should prohibit the sale of seed except through the Government farms. I did so because the seed sold by the ginners is very mixed. We have a Legislative Council in the State with powers of enacting laws and regulations.

5023. I have said in my written evidence that the saw gin is superior to roller gin. I have no practical experience of saw gin, but I think the saw gin cleans cotton better than the roller gin and takes less power to drive.

5024. There is no artificial dampening resorted to in our ginning factory or in other ginneries in Bhopal. I have been told that cotton is dampened in Khandesh before being put through the opener. The other forms of adulteration are that the buyers of kapas, when they bring it in, do not, as a rule, separate good cotton from bad cotton before we are asked to gin. The only man who separates good cotton from bad is the buyer for the Bhopal State Pressing Mills.

5025. The ginning charges are twelve annas for 100 lbs. of kapas. The charge is made on the weight of kapas and not on bale. The pressing charges are Rs. 6 per bale of 400 lbs. I do not buy or sell kapas. I only gin cotton on commission.

5026. The ginning percentage is 31 to 35 per cent. I do not know by what name the cotton is sold in Bombay. I am not a dealer. There is no difference between the Indore and Ujjain cotton and the cotton from Bhopal. Bhopal perhaps represents a better class of cotton than Indore, but not so good as Ujjain. It stands fairly well as regards quality.

Mr. M. DAULAT RAI, Jagirdar, Mustajir and Superintendent of Octroi (Customs), Bhopal State.

EXAMINED AT SEHORE, NOVEMBER 20TH, 1917.

No written statement was submitted by the witness.

(Translation.)

5027. (Mr. Wadia).—I am Jagirdar, Mustajir and Octroi Superintendent of the Bhopal State. There is an export duty both on kapas and cotton. The duty on ginned cotton is greater than on kapas. On raw (lint) it is Rs. 2 per maund of 40 seers for unpressed cotton and on pressed cotton the duty is Re. 1 per bale. The rate per bale is lower as an inducement to cultivators to have their cotton pressed in the State pressing factory.

5028. I have got lands of my own, 600 bighas in extent. Of these, twelve bighas are under cotton. I grow mahi cotton, some long staple and some short. It is a mixture of all kinds. I sell it to the merchants at the ginning factory. Last year I got Rs. 9 to 10 per maund. No price has yet been fixed this year.

Gwalior.]

Mr. J. G. HAMMETT.

5920. Being Customs Superintendent, I can say that there is no damped cotton coming in as it used to do some ten years ago, as the cultivators can not now get a good price for damped cotton.

5930. The ginned cotton from Bhopal goes to Bombay, but some *lapas* is also sent to mills in British territory at Narsingpur, Sohagpur in Hoshangabad, to the Indore State and the Gwalior State. The export duty on *lapas* is Re. 1 per maund.

XI—Gwalior.

Mr. J. G. HAMMETT, M.I.M.E., Mill Manager, Binod Mill, Ujjain.

EXAMINED AT UJJAIN, NOVEMBER 21st, 1917.

Written Statement.

I.—AGRICULTURAL EXPERIENCE.

(a) "Deshi" short staple cotton.

5931. (1) Experience.—I have been in Akola three years and Ujjain four years and I have visited many times Gujarat districts. I am not in touch with the cultivators.

5932. (2) Varieties.—The varieties with that I am acquainted are—

Nargaoon	12 to 15 per cent. loss in Blow room.
Amroiti	9 " 13 " " "
Pachora	12 " 18 " " "
Pulgaon	12 " 14 " " "
Sawginned	12 " 16 " " "
Shiagaoon	12 " 16 " " "
Waida	12 " 16 " " "
Agra	8 " 12 " " "
Akola	10 " 11 " " "
Akot	12 " 15 " " "
Virampore	12 " 15 " " "
Barsi	15 " 20 " " "
Bagalkot	16 " 22 " " "
Bassim	12 " 16 " " "
Bhawanager	12 " 18 " " "
Broach	8 " 12 " " "
Bhusawal	12 " 15 " " "
Bijapore	12 " 18 " " "
Kumpta	18 " 22 " " "
Chahagaoon	12 " 18 " " "
Chickley	12 " 16 " " "
Dhamangaon	10 " 11 " " "
Dharwar	14 " 18 " " "
Dhollera	11 " 18 " " "
Dhulia	12 " 16 " " "
Chichpur	12 " 15 " " "
Hao	9 " 12 " " "
Hinganghat	10 " 13 " " "
Jualna	11 " 20 " " "
Jalgaon	12 " 18 " " "
Khamgaon	12 " 16 " " "
Khandwa	12 " 16 " " "
Karanja	12 " 16 " " "
Mohwa	12 " 16 " " "
Murtijapur	12 " 16 " " "
Malkaporo	10 " 14 " " "
Naga	14 " 16 " " "

(2) Malwa Cotton List, and cotton used in Binod Mills:—

Agar	14 per cent. and fair staple, one of the best Malwa cottons.
Alot	14 " Short staple.
Akodia	14 " Fair staple.
Bakani	13 " Short staple.
Daram	12 " " "
Barnawar	15 " Fair staple.
Barnagar	16 " " "
Khujnere	13 " " "
Kalapipal	12 " " "
Khilchipore	15 " Short staple.
Khirabad	15 " " "
Manawar	20 to 25 per cent. Short staple.
Nagda	12 per cent. Fair staple.
Nalkhera	13 " " "
Palia	13 " " "
Rajgarh	10 " Short staple.
Sonkatch	15 " Fair staple.
Sajapore	14 " " "
Sarangpur	14 " " "
Suener	14 " " "
Sujalpor	24 " " "
Unhel	13 " One of best stapled cottons.
Ujjain	15 " Fair staple.

Gwalior.]

Mr. J. G. HAMMETT.

[Continued.]

5933. (4) *Yields and profits.*—Short-stapled Malwa *deshi* cotton generally produces 638 lbs. Agricultural profits generally are about forty per cent.

5934. (5) *Rotations and manures.*—So far as I know, they do not use any kind of fertilisers for cotton except in a few districts.

5935. (6) *Comparative returns.*—Generally the difference between the production of long-staple and short-staple cotton is 20 to 25 per cent. increase in favour of short stapled.

(2) In comparison with other *deshi* crops the production is about twenty per cent. less in slightly longer stapled cotton.

5936. (7) *Conditions affecting increase in area.*—It fluctuates, I presume, according to success of season. An increase may be attained by using fertilisers.

5937. (8) *Uses of seed and seed selection.*—Seeds are for re-sowing and food for cattle, also extracting cotton oil, which is largely used for cooking and for mixing with other oils, also hair oil. After the oil is extracted, these seed-cakes are also used for feeding cattle and manure.

(2) I believe seed is sometimes selected as far as possible. Hand-ginned seed is given preference for sowing.

5938. *Necessity for care in ginning factories.*—I am of opinion that much more care is required in ginning factories in keeping the seed from different districts separate so as not to mix the staple, and I find there is one very bad practice of forcing large quantities of cotton through the gin by working them at great speeds. By this practice much seed is broken and left in the cotton. For I find, at some places, they run their machines to produce fifty to sixty lbs. per hour and even more, while for good ginning not more than forty lbs. per hour is proper when the cotton would be cleaned and more free from seeds.

(b) "*Deshi*" long staple cotton.

5939. (11) *Varieties.*—The following are the districts in Gujarat:—

Navsari, Bardoli, Siyan, Kim, Rander, Sachim, Surat, Itola, Baroda, Palage, Ankleshwar, Broach, Ahmedabad.

Kathiawar cottons.

Dholleras—Wadhwan and Bhavnagar.

5940. (15) *Conditions affecting increase in area.*—In my opinion, the necessary things for improvement of crops would be proper irrigation and fertilisers. The season generally for long-staple is from December to March.

5941. (16) *Suitability of existing varieties.*—I am of opinion that all cotton growing districts can be improved by greater care in preparing the land and sowing and by proper fertilisers and irrigation and care in gathering and storage.

5942. (17) *Prevention of mixing of different varieties.*—This largely depends on the care taken in ginning factories and in gathering as mentioned in paragraph 5938 above.

IV.—MANUFACTURE.

(a) *Ginning and pressing.*

5943. (38) *Saw gins versus roller gins.*—The gins most generally used in India are Macarthy gins or roller gins. The objection to saw-gins I generally find is that it takes too much out of the cotton and has a tendency to crack the seed.

5944. (40) *Factory labour.*—Shortness of labour is, I believe, experienced throughout India. We spend sums of money in bringing men from all parts of India, but most of them do not remain long.

5945. (41) *Condition of cotton.*—We do not find the delivery of cotton to the factories particularly objectionable.

5946. (42) *Effect on machinery of replacement of short-staple cotton by long-staple.*—If short-staple cotton were replaced by long-staple cotton, we should have to change all the diameters of the draft rollers. This would take us back to the time before the Cotton Frauds Act was removed, when we used larger rollers.

(b) *Spinning and weaving.*

5947 (43) *Counts spun and market for yarn or cloth.*—We spin from 6½s. counts to 40s. counts. Counts from 14s. to 40s. are used for weaving and also counts from 6½ to 28s and even 30s. We sell all over India.

Mr. J. G. HAMMETT called and examined.

5948. (President.) I have had considerable experience of the cotton trade extending over a period of 44 years. I have given in my written evidence a list of the various types of indigenous cotton in the Gwalior State. The cottons shown in the list that I have given you are the cottons that I have most to do with. It is all *malvi* cotton really. It is all short staple. The quality is mixed. The best are *Agar*, *Khujnir*, *Unhal* and *Susner*. *Nagda* is a fair staple. The length of staple of *Susner* is about ¾ths of an inch. The staples of the best *malvi* cotton varies from ¾ths to ¾ths inch. We import longer staple cotton such as Gujarati, Westerns and Southern from outside. Three-fourths inch is the maximum of the staple of the cotton I get locally.

5949. We do not gin cotton in our mills. The cotton reaches us in fairly good condition. The cotton is delivered in *boras* in open carts. Fully pressed bales also come in carts. The cleanliness depends on the quality and also in the ginning. They have a very bad habit here of forcing quantities of cotton through the gins at the rate of sixty, sixty-five or seventy lbs. an hour when forty lbs. an hour is ample for good ginning in a Macarthy gin. The cotton is very variable in staple. It is very badly mixed. To improve that, ginning should certainly be done more carefully. The seed would then be properly cleaned and not crushed.

5950. (Mr. Wadia.) All the cotton comes in very mixed. That is easily apparent from the length of the staple. There is always short staple cotton in it which shows that there is a mixture. We have three qualities which we mix. We import some Gujarati and Navsari cotton to spin 28s to 40s.

5951. We sell our cloth not only locally, but in every part of the country. We sell it in Agra, Delhi, Calcutta and all parts of India.

Mr. LEEMANHOFF K. S. NATHALIS.

is $\lim_{\lambda \rightarrow 0} \lambda^{-1} \mathcal{H}^1(\gamma_\lambda) = 2\pi$. This corresponds to a helix of radius 1. That is the limit with the ordinary process.

2015. We're a startup, but even so, we're not a little startup in order to meet the rate of return that our investors require. We're 11 people doing it, but we've then have it done by the CEO.

[illegible]

LAURENCE H. WHITE, November 21 7, 1918

וְיִשְׂרָאֵל יִשְׁמַח וְיִשְׂמְחוּ אֲנֹכִי וְכָל הָעָם וְיִשְׂרָאֵל יִשְׁמַח וְיִשְׂמְחוּ אֲנֹכִי וְכָל הָעָם

I **Hauptstadt:** **Singapur**

(10) "I have a great deal of money."

1971. (1) Experience. In the cotton growing district of Ujjain I have been living for the last thirty years and have been engaged in the cotton cultivation of the surrounding villages. I have a punning history of Ujjain and I have been growing in India.

5. (2) Varieties. The commonest varieties are grown in Malaya. In Malaya, although Malaya cotton is common in the main cotton belt from all districts and villages representing themselves as such, the varieties of the representative place, with a small difference, the following are the varieties which are grown:

- (iv) *Mahes*, p. page. This variety is generally grown in Malva in large quantity. This quality is rather inferior to *Besoh* in softness and staple (length) but is superior to the product of *Bennad*, *Berar* and *Khar* in softness. To the kind of Malva is especially suitable to it (*Mahes* *Khar*). From this seed the rate of yield are being 100 per cent.
- (v) *Besoh* (short staple) cotton. This quality is only grown in irrigated area in fifteen per cent. The fibre of this variety is rather shorter than *Besoh* and stronger but less pure whiteness. In case of drought, the cultivators are sowing this quality (*Besoh*) mixed with *Mahes* and picking it out, because it is impossible to separate the two. Though it comes separate in very small quantities, yet the local merchants are ginning this cotton after mixing it with *Mahes*.
- (vi) *Fardes* cotton, which seeds have been introduced in Malva for the last six years. Although in Malva, the staple of this variety has turned out soft and good in colour, but in test the strength of staple is less. In the first year, the exotic cotton gives a good staple, but year by year after growing it gives shorter staple in length, resembling *Mahes* cotton. Yet it is superior to *Mahes* in fibre (strength) in many respects.

5959. (4) *Yields and profits.* The expense per pound come to an average of Rs. 14, while the yield is three muskels per lb., worth about Rupees 25.

5960. (6) **Comparative returns.**—The yield of short staple cotton per *bigha* is $3\frac{1}{2}$ maunds, while that of long staple is three maunds per one *bigha* and hence the cultivators prefer the shorter. Yet they grow both the qualities as the longer one is more valuable than the shorter one.

5501. (7) Conditions affecting increase in area.—Ten years ago when the cotton standard rate was much less and the chief exporting product was opium, the cultivators were not used to grow cotton more. Grain and opium were largely sown. Now when the opium growing has totally been prohibited by the Government, the agriculturists are only depending on cotton and other grain crops. And as the cotton standard rates are increasing, the grain crops are lessened and the cotton growing is increased. Now to increase the cotton crop in this country depends on the lessening of other grain crops, otherwise it is quite impossible.

5962. (8) *Uses of seed and seed selection.*—Cotton seeds of the first crops are preferred for sowing by the cultivators and hence the cotton is separately hoaped in the factories. But the cultivators have no experience whether the seeds they purchased for sowing are of first or second crop. The seeds are used here only for sowing and animal food. The seeds selected for sowing are not ginned by hand but by machines.

Question.]

Mr. LUKMANBHAY K. S. NAZARALLY.

[Continued.]

II.—COMMERCIAL ASPECT.

5963. (30) *Local trade customs.*—Regarding local trade customs, I beg to state that the cotton business here is only carried on by cash, agency future buying and advances, and no contracts are being made.

5964. (31) *Standardization of commercial names.*—The cotton coming in the Ujjain market by the name of Malwa cotton is called *malvi* cotton, though in certain districts, there is a proportion of *bani*. *Malvi* is counted as superior to others and is known by the names of the productive districts. But owing to the climatic changes (changes in weather) these names have also been changed in the preceding years as the same quality is produced in the other districts and is known as *malvi*. But in Ujjain market, inferior cotton is also coming from other districts and these qualities are also recognized by the same (district) names and hence *redvi* and *supari* cotton which come from Malabar side are the chief qualities of cotton.

III.—MANUFACTURE.

(a) *Ginning and pressing.*

5965. (36) *Type and number of gins and presses.*—Single roller gins are only used in our Malwa Factories. In Mund (District Gwalior) double roller gins are used as the crop has a shorter staple.

5966. (37) *Size of bale.*—The measurement of the bale produced is 50 x 20 inches.

5967. (41) *Condition of cotton.*—The great objection is mixing which is specially occurring at the following four times.

- (1) *While sowing.* The cultivators are getting seeds of the short and long staple mixed with each other and these mixed seeds are being sown.
- (2) *While picking.*—When the crop is ready, the cultivators are bringing the crops picked mixed for sale in the market or factories.
- (3) *In bazars or factories.* Merchants heap these cottons of the inferior and superior qualities mixed as they get them from cultivators in bazars as well as in factories.
- (4) *In local centre.* While the ginned cotton is coming in local centre the merchants are pressing these cottons mixed so as to conceal the real quality.

(2) This sort of mixing is specially affecting real *malvi* cotton and hence it is necessarily objected to by the Government which advises the cultivators to have the cotton picked in separate qualities and brought to separate market. If this practice be fully carried out, the other three sources of mixing will soon be stopped.

(b) *Spinning and weaving.*

5968. (43) *Counts spun and market for yarn cotton.*—We spin from 5's to 28's counts at present from Malwa products while the yarn market reaches to Indore, Burhanpur, Bombay, Ahmedabad, Cawnpore, etc.

5969. (45) *Effect on cotton market of replacement of short staple cotton by long staple.*—If long staple replace short staple in Malwa, the effect on the cotton market will be generally very bad, for the climate of this country is not suitable for longer staple.

Mr. LUKMANBHAY K. S. NAZARALLY called and examined.

5970. (Mr. Wadia.) I am the proprietor of Ujjain Cotton Ginning, Spinning and Weaving Mills. I have fifteen thousand spindles and 244 looms. I only buy the best *malvi* cotton for use in my mills. I own 22 ginning factories also. I generally buy *kapas* and gin it myself. I sometimes buy lint as well. In my opinion, Agar, Barod, Shujahpur, are all one class of cotton more or less mixed, but in Suseer cotton there is an even greater mixture of short staple. The prices in all the districts on the same day for *kapas* are however more or less the same. The price of lint is also about the same but in Neemuch and districts round about the price is lower because the staple is shorter.

5971. I generally get *kapas* as well as lint. There is no dumping here. I also buy and sell cotton from my ginning factories besides using it in my own mills. Most of the cotton that I sell goes to Ahmedabad and to Bombay in fully pressed bales and also to Cawnpore. I only sell loose lint and do not press cotton myself. I sell to dealers who get the cotton pressed. Five or seven Ahmedabad mills have got their own buying agency here; and also some Baroda mills. They get the cotton pressed themselves and send it to their mills. I do not buy any cotton except that grown in this district. I do not buy the *nimari* cotton. The *nimari* cotton comes into the Ujjain market. The quality of the *nimari* cotton is worse than that of *malvi*. *Nimari* cotton comes to this market only in the form of lint and not of *kapas*. The figures the proportion of the cotton coming into the Ujjain market are as follows :—

Short staple <i>bani</i>	3 annas
Long Staple <i>bani</i>	2 annas.
Malvi	11 annas.

Nimari will fall under short staple *bani*.

5972. If exotic cottons were grown here, the climate would not be suitable for them, but, if pure *malvi* of long staple cotton were grown it would have a very good effect on the market. If the buyers were to offer a premium for pure *malvi* long staple, the cultivator would grow it. If pure *malvi* were grown by the cultivators and the buyers offered a premium, the cultivators would grow it because I think the price would be up to Broach.

5973. (Mr. Henderson.) My impression is that in four or five years any kind of *kapas* sown in Malwa becomes *malvi*, if the same seed is sown continually every year. The best cotton is Sonakutch. The mixture in it is only about one-sixteenth. It gets a premium of annas four to six per *kachha* maund of twenty seers. It is clearly all one class of cotton. I purchase No. 1 Ujjain. It is grown in Ujjain itself. No. 2 Ujjain is the cotton which comes from other markets.

Gwalior.]

Mr. SHEIKH GOUS ALI.

Mr. SHEIKH GOUS ALI, Manager, Sorabji Cotton Press, Ujjain.

EXAMINED AT UJJAIN, NOVEMBER 21st, 1917.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

(a) "Deshi" short staple cotton.

5974. (1) Experience.—I have been stationed at Ujjain in the Mdwā Division of the Gwalior State for the last twelve years and have been in touch with cotton cultivators.

5975. (2) Varieties.—The *lani* variety of *deshi* short-staple cotton is grown in the district.

5976. (4) Yields and profits.—The average yield is about twelve Bengal maunds and the profit about Rs. 32 per acre.

5977. (5) Rotations and manures.—On rich soil the cotton crop is succeeded by *rabi* crops such as wheat, gram, linseed, etc., and on poor soil by *Harif* crops, such as *juar*, *bajra*, *til*, etc.

5978. (7) Conditions affecting increase in area.—The area under short-staple cotton does not fluctuate largely. There is possibility of an increase under short-staple cotton, for it brings better return to the cultivator. It is difficult to check its increase.

(b) "Deshi" long-staple cotton.

5979. (11) Varieties.—The *malvi* variety of *deshi* long-staple cotton is grown in the district.

5980. (13) Yields and profits.—The average yield of *deshi* long-staple cotton is about six Bengal maunds and profit about Rs. 15 per acre.

5981. (15) Conditions affecting increase in area.—Irrigation facilities would help an increase in the area under *deshi* long-staple cotton.

5982. (17) Prevention of mixing of different varieties.—To prevent the mixing of *deshi* long-staple cotton with *deshi* short-staple in the field, suitable arrangements should be made to supply the farmers with pure long-stapled cotton seed and in the factory nothing but legislation can stop it.

5983. (18) Uses of seed and seed selection.—The seed is used for sowing and fodder and the surplus is exported. Generally no seed selection is made. Hand-ginned seed is preferred to that of the machine-ginned.

(c) Exotic cotton.

5984. (28) Importation of seed.—If it is found desirable to introduce the sowing of the American or Egyptian cotton here, seed from America and Egypt should be imported and the same should be sown as a trial side by side in one and the same field with selected seed of such cotton grown in India, and to begin with the experiment should be made only on a limited scale and wherever it may suit to do so.

II.—COMMERCIAL ASPECT.

5985. (30) Local trade customs.—The present custom of the market for *kapas* sale is that some cultivators bring and sell their *kapas* direct to the buyers and some through commission agents. Cotton is sold through commission agency for which there are no fixed rules and regulations. The cotton sellers have to depend wholly on the mercy of the commission agents who, in addition to their commission, charge the farmers with several other expenses as they like.

5986. (31) Standardization of commercial names.—The commercial name of the long-staple cotton is *malvi* and that of the short-staple *lani*. There is also another variety of short-staple cotton called *nimari* which finds its way here from Manawar, a place in the Nimar District of the Gwalior State. The long-staple cotton can be standardized by the name *malvi* and the short one by *nimari*.

5987. (32) Buying agencies.—The best form of buying agency is to have a regular cotton market established where both the buyers and the sellers may operate freely in open competition.

III.—STATISTICAL.

5988. (33) Improvement of cotton forecast.—The cotton forecast, as at present published, is not quite accurate and is also issued very late. The *patwaris* and landlords should be made to submit a report either weekly or fortnightly to the highest Land Record authority who should get the same published in collective form in the *Gwalior Government Gazette* as well in the weekly paper *Jayaji Pratap*.

5989. (35) Publication of Liverpool and Bombay prices.—The daily publication of Liverpool (also American) and Bombay cotton prices in the up-country markets would be useful.

IV.—MANUFACTURE.

(a) Gining and pressing.

5990. (36) Type and number of gins and presses.—Nasmyth type of presses and Platts' Single Roller gins are used on this side. I have in my charge two such presses and a gin factory with 48 gins.

5991. (37) Size of bale.—The size of the bale produced in our factory is 60" × 17" × 21".

5992. (38) Saw gins versus roller gins.—Saw-gins are not at all suitable for the *kapas* produced in this district.

5993. (40) Factory labour.—Scarcity of labour is felt more and more every day which has also caused the wages to go very high.

5994. (41) Condition of cotton.—Cotton arriving into Ujjain from Manawar (Nimar District) contains a large percentage of leaves which is very objectionable.

5996. (42) Effect on machinery of replacement of short-staple cotton by long-staple.—Assuming that if short-staple cotton were to be replaced by long-staple cotton, no substantial alteration in our machinery would be necessary.

Gualior.]

Mr. P. SARAPATHY.

[Continued.]

results. In the same way, I suggest these cotton leaves and dust should be used as manures, besides the cow-dung and other manures should be put in the *deshi* staple cotton fields to improve the yield.

6006. (16) *Saltability of existing varieties.*—When I first came to Ujjain, the two districts, Ujjain and Shajapur, had purely *deshi* staple cotton produced—of “silky and long-staple cotton”—and only during three or four years the dealers began to import the short-stapled *kaps* from Bengal, Kotah and Mewar sides and these seeds were given to cultivators and they began to sow short-staple and further these short-stapled seeds are mixed with long stapled seeds and this mixture of seeds was given for sowing in stapled sowing area. Thereby the usual *deshi* long-staple cotton is becoming deteriorated. Instead of improvement in the usual *deshi* long staple it has now become (1) short staple and (2) long staple deteriorated, hence the inferior types should be prohibited and instead the superior types may be introduced or the whole area should be the usual *deshi* long staple and the same may be improved.

6007. (17) *Prevention of mixing of different varieties.*—I recommend, while purchasing, the *kaps* of different types, i.e., (1) *deshi* short staple, (2) *deshi* long staple, (3) exotic cotton should be stacked and ginned separately and only the first picking arrivals may be done in this way and the seed may be stored in godowns (instead of in open places) to avoid the same being damaged by rains falling in unusual times while this is being done. I suggest the same should be supervised by the persons appointed for this work by State Darbar. At present, in my opinion, at times, far from satisfactory quality of seeds are given to cultivators. The arrangement to give cultivators best seeds should be made.

6008. (18) *Uses of seed and seed selection.*—The seed is generally used for sowing, cattle feeding and for export to Bombay, when the cotton crop is binger. Seed selection is only practised when exporters buy. For sowing purposes mostly the ginned cotton seed is used.

6009. *General.*—Out of four districts, i.e., Ujjain, Shajapur, Mandaur and Amjhara :—

- | | |
|--|--|
| (a) Ujjain and Shajapur are stapled cotton districts and little of shorter staple. | } All these cottons go to Ujjain for pressing. |
| (b) Amjhara short stapled district. | |
| (c) Mandaur is shorter staple than Ujjain and Shajapur. | } This was formerly going to Ujjain for pressing. Now there is a press at Mandaur where it is pressed. |

In order to keep Ujjain pressed cotton purely of stapled cotton, Amjhara should be pressed there only by granting permission to erect a press there if anyone comes forward to erect one. To improve the Ujjain staple, the best way is to prohibit short stapled *kaps* arriving into this place. This will be preventing the seed being utilized for sowing in stapled cotton area.

II.—COMMERCIAL ACTS.

6010. (30) *Local trade customs.*—The *kaps* is sold by *mani* of 240 *seers* which is six Bengal maunds which is equivalent to 493.68 lbs. out of which an average lint turned out of *deshi* stapled cotton is about 140 lbs. per *mani* of *kaps*, whereas the *deshi* short staple cotton is about 155 lbs. lint per *mani*. The major portion of the arrivals are *deshi* stapled cotton. Short stapled *kaps* are mixed with long staple and brought into Ujjain for sale and at times short stapled *kaps* are brought separately. The *kaps* carts, when they enter into Ujjain, go direct to different gin factories and at times they are left out in the streets for a few hours to get more price or to find out their commission agent and then they go to gin factories. The *kaps* rates are opened by gin factories who buy on their own account. The buyers (other than gin factories) have to pay the same price. At times, different rates are paid in different gin factories. This rate is opened out by ginning factories for first pickings. As for second and third pickings, the rates are paid according to qualities. The *kaps* is sold by cultivators directly in which case the buyers' men weigh the same and mostly it is sold through commission agents and in this case their men weigh the cotton. He gets commission from cultivators as well as eight annas per cent from the buyers. In my opinion, this system is bad, therefore I recommend an open market so that cultivators may get competitive prices for their *kaps*. Regarding ready cotton this mostly comes by rail and cart load from outstations and interior ginning factories. When it arrives here, it is at once unloaded in factory compound and in the godowns in the town. A petty dealer of ready cotton rarely wishes to sell without unloading in which case he sells without the aid of commission agent. Generally, all cotton after it is unloaded is weighed and stacked by the commission agents through whom (brokers) only the cotton is sold. The buyers go and select the cotton and close the bargain and take delivery of the cotton and make payments for the same on the very next day. The commission agents for cotton are mostly shroffs and as for *kaps* they are mostly different commission agents who are grain dealers and others. The system of selling cotton is good, but the buyers are in the dark as to what superior or inferior qualities of cotton arrive into Ujjain. This is only known to the buyers when they go to the place where the cotton is stored and see the same. By having a market the cotton that arrives in a day will be for general inspection of all buyers. After this the holders if they like may sell their cotton at once or store up the same. The cotton is sold per maund of twenty *seers* (which is half a Bengal maund)-41.14 lbs.

(2) So far as I know, the buyers (mills and exports) do not make any advances on *kaps* and cotton. Future buying or contracts are being done by local dealers themselves, the exporters of late are not doing this.

6011. (31) *Standardization of commercial names.*—Ujjain and Shajapur cotton are called “Ujjain staple,” Amjhara side cotton “short staple.” If both are mixed “Ujjain mixed.”

6012. (32) *Buying agencies.*—The buying agency will be improved by having a market.

III.—STATISTICAL.

6013. (34) *Improvement of statistical information.*—I think it will be very useful to the trade if the State Darbar could give out, by printed leaflets, the weekly pressing done and the arrivals of *kaps* on cotton of every week. A similar return is issued by the Central Provinces Government.

6014. (35) *Publication of Liverpool and Bombay prices.*—I think only daily publication of Bombay rates will do. This will be a useful information for trade.

V.—GENERAL.

6015. (46) *Attitude of buyers to improved cotton.*—Stapled cotton has premium rates.

Gwalior.]

Mr. NARAYAN DAS.

Mr. P. SABAPATHY called and examined.

6016. (*President.*) I have been stationed in many places, Madras, Berar, the Central Provinces and Ujjain. I was in Khamgaon for eight years and have been in Ujjain for the last ten years, eight years permanently. Westerns in Madras were one of the best cotton I met with. When I left Madras twenty years ago, the staple of Westerns was over an inch. It was a long-staple cotton. Ujjain cotton has a good staple; it is over an inch and a quarter.

6017. In testing *malvi* cotton we generally pull the staple from the cotton in fully pressed bales. The exporters always take it from the fully pressed bales and not from cotton in the field. I do not think that cotton if it is pressed shows a longer staple than cotton on the plant. It will, on the average, be of the same quality; sometimes lower, sometimes higher. I always buy *malvi* as an inch staple cotton. I send my cotton to Bombay. My principals open each lot and if the staple is not long, they remark about it. I can buy *malvi* cotton pure in the market. I can do so by selecting *kapas* as well as by selecting ready ginned cotton.

6018. I buy *kapas* as well as lint. The *kapas* of short-staple and long-staple cotton is brought in mixed. The *kapas* is taken to the ginning factories which allow the carts to come in and fix a price, which is the same both for short-staple and long staple cotton. They do not get the proper price for long-staple cotton. The cultivators bring the carts to the factories and the ginners see the number of carts and, even if it be 500 carts, they fix the lowest rate which they then pay the cultivators though the rate for ginned cotton may be quite different. The Bombay rates have nothing to do with the *kapas* rate. The ginning factory owners get the profit themselves mostly and the premium that is paid for the staple goes in to their pockets instead of to the cultivators. The cultivators get lower prices for the second and third pickings. If the cultivator refuses to sell his good *kapas* to the gin owners, he may unload it himself, if he is a big cultivator, get it ginned separately and dispose of it himself. Generally the gin owners induce the cultivators to sell the *kapas* to them. We have a buying agency only and no ginners here. We buy *kapas* from Ujjain and from Burhanpur and arrange to have it ginned in one of the ginning factories. If a market were established here, the cultivators would get the competitive price and it would be in their interests. I would like to have a market on the same lines as they have in Akola. Then we can inspect all the qualities and pay prices according to quality. At present, quality is not taken into account by factory owners.

6019. Pure *malvi* is a very good cotton if it is not adulterated. For the last three or four years it has been much adulterated. It is now worse than it used to be. There has been rapid deterioration. *Malvi* is a longer staple cotton than *bani* which in these parts is a short staple cotton.

6020. (*Mr. Wadia.*) I get my cotton ginned at the Mizamal Nertin Factory. The charge for ginning now is Rs. 2-12 to Rs. 2-14 per *man* of *kapas* of 49½ lbs. I get my cotton pressed at the same press. I think it is a Nasmyth press. There used to be some sort of private ginning but there was no legal agreement. My firm have a special agreement with the ginning factory. We settle the rate for pressing and ginning. The pressing charge is according to the pool rate and the ginning charge is according to what we may mutually fix.

6021. There is some damping of cotton in this district but it is only slight because the cotton here is leafy and won't absorb much moisture. I do not damp my cotton. Some of the Indian merchants do it. The ginning factories mix various kinds of cotton. We do not mix but gin the different varieties separately. We make type samples for the Bombay market. We have got standard samples. These samples do not contain any mixture. When we buy *kapas*, we specially select it. A European Assistant sometimes comes here.

6022. There are three pressing centres at present in this tract, one at Mandsaur, one at Neemuch and the third at Ujjain. Cotton from three districts comes to Ujjain, i.e., cotton from Ujjain, Shajapur and Amjhera and at times also from Indore. I suggest that Amjhera cotton should be kept separate from Ujjain and then Ujjain cotton would be purely staple cotton. I suggest this because Amjhera is a much inferior cotton and shorter staple. It is mixed with Ujjain cotton which has a more longer-staple. I want a press started at Amjhera so that Amjhera cotton may not come to Ujjain and be passed off as Ujjain cotton.

6023. (*Mr. Roberts.*) The State could prohibit Amjhera cotton being brought to Ujjain. This has only been done for the last three or four years. Before that we were not getting any short staple cotton in this place. Short staple cotton comes from Kotah and Mewar to Ujjain for the purpose of mixing. I know that ginning factories buy *kapas*. Mr. Naziralli buys *kapas*, gins it and sells it to me.

6024. Sellers as well as buyers and dealers have their own weighmen. If the cultivator wants to sell his *kapas*, it is the factory owner who weighs it. I cannot say whether he gets the proper weight. If the cotton is sold through a commission agent by the cultivator, the commission agent has his own weighmen. The commission agent takes a commission from the cultivator as well as from the buyer: he gets a double commission. This is a system which is not in force anywhere else in India. It is the interest of the commission agent to favour the buyer. The commission agents here are under the influence of the ginning factory owners. If an open market were established, all these disadvantages would be done away with. It will be a benefit to the cultivator. They will get the full price for the best quality of cotton. If it is a long staple cotton it will be paid for accordingly. I certainly think that long-staple would fetch a better price and such markets would encourage the growth of long staple cotton.

6025. The Central Provinces Government issues a weekly leaflet in which the weekly arrivals of *kapas* and the ginning and pressing done and other things are shown. Some similar publication would be a great advantage in Central India.

Mr. NARAYAN DAS, Proprietor, New Gin Press Factories, Mandsaur.

EXAMINED AT UJJAIN, NOVEMBER 22ND, 1917.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

(a) "*Deshi*" short-staple cotton.

6026. (1) Experience.—I have been at Nimbhera (Tonk), since 20 years. I often live there and have actual touch with cultivators.

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Mr. NARAYAN DAS.

[Continued.]

6027. (2) *Varieties*.—*Deshi* medium-staple cotton like Oomra and Akola cotton is grown there.

6028. *Area under cotton*.—About 5,000 acres are grown in the whole district of Nimbhara.

6029. (4) *Yields and profits*.—Yields of 50 lbs. to 100 lbs. cotton ginned per acre are obtained. In irrigated land, a higher yield may be obtained.

6030. (5) *Rotations and manures*.—*Juar* and *til* are the rotations with cotton. Commonly no manure is used except in some fields. No manufactured manure is used.

6031. (7) *Conditions affecting increase in area*.—The area fluctuates on condition of rain, but the area and crop have increased as our Nimbhara ginning factory first year (1898) ginned 20,000 maunds *kapas* and last year (1916) it ginned 90,000 maunds *kapas*; this was the production of Nimbhara alone.

6032. (8) *Uses of seed and seed selection*.—No seed selection is practised on any principle. Hand ginned and machine ginned seeds are used but seeds which are cut and not properly ginned are objected to by cultivators.

(b) "*Deshi*" long-staple cotton.

6033. (10) *Experience*.—Since 25 years I am stationed at Jaora and Mandsaur where I have actual touch with cotton cultivators.

6034. (11) *Varieties*.—*Malvi* long-staple cotton is grown in Jaora and Mandsaur and Merwari short-staple cotton at Neemuch which is the northern portion of Mandsaur.

6035. (12) *Area under cotton*.—Nearly 80,000 acres are grown under cotton in Mandsaur including Neemuch.

6036. (13) *Yields and profits and comparative returns*.—Long-staple cotton gives less yield than short-staple cotton, therefore cultivators get more profit from short-staple cotton than at present from long-staple cotton.

6037. (15) *Conditions affecting increase in area*.—Good seed which gives a large percentage of cotton, and good colour classification and early sowing with irrigation can encourage cultivators to make large cultivation of long-staple cotton.

6038. (17) *Prevention of mixing of different varieties*.—If buyers will pay a higher price for pure long staple, mixing will be lessened.

(c) *Exotic cotton*.

6039. (28) *Importation of seed*.—Importation of direct seeds from America and Egypt is desirable but on the whole I prefer the Indian-grown seeds of the same variety.

6040. *General*.—I often see in the present fields of short and long-staple cotton plants of exotic cotton mostly in Mewar (Udaipur State) districts. If the cotton from plants is picked carefully and separately and ginned and the seeds given to cultivators and sown in proper time, I expect a large production of exotic cotton in these districts. The buyer should also pay keen attention to purchase this cotton at a proper high price to encourage cultivators to increase it.

II.—COMMERCIAL ASPECT.

6041. (30) *Local trade customs*.—An Agency or syndicate is desirable for purchasing new introduced long-staple at a premium price and should advance money and make future contracts. But this all should be on the principle of encouragement to cultivators.

6042. (31) *Standardization of commercial names*.—*Malvi*, *Merwari*, *Nimari* cottons are the names of the cottons as they are grown in these districts but these names are not suitable so cotton cannot fetch its proper price in Bombay and Liverpool; as our Nimbhara and Neemuch districts producing Oomra and Akola cotton which is sold in Bombay at Rs. 40 to 50 less per *khandi*. This is a defect in the trade.

6043. (32) *Buying agencies*.—I recommend that when a new cotton sample reaches Bombay, it should be classified and should be sold accordingly. Otherwise where there is no standardization and classification, sellers suffer and cannot get the proper price.

III.—STATISTICAL.

6044. (34) *Improvement of statistical information*.—Ginning outturns should be registered and gin owners should be held responsible for giving correct information weekly, also the outturn of hand-ginned cotton should be taken into consideration.

IV.—MANUFACTURE.

(a) *Ginning and pressing*.

6045. (36) *Type and number of gins and presses*.—I have Platts' Single Roller Macarthy gins and Hydraulic Baling Presses—

(a) 220 gins in ten factories in ten places in the distance of 140 miles from Nimbahera to Udaigarh.

(b) Two pressing factories, one at Nimbahera, maker J. H. Riley of Bury; one at Mandsaur, maker Duncan Stewart, Glasgow.

6046. (37) *Size of bale*.— $49'' \times 17'' \times 19''$ is the size of the bale produced. It is about ten cubic feet density more than 38 lbs. per cubic foot.

6047. *General suggestions*.—My general suggestions for increasing the production of long-staple cotton are cheap means for motive power to work gin factories, such as gas, engine, etc. the introduction of Cummin's Patent presses which will press 7 c.f. and keep excellent quality, increased means of irrigation, early sowings, use of artificial manure and dissemination of proper knowledge of modern cotton cultivation to cultivators in the vernacular.

Mr. NARAYAN DAS called and examined.

6048. (*President*). I know the local cottons. *Malvi* cotton is grown in the Malwa district, *Merwari* cotton is grown in Mewar. Then there is *Neemuch* cotton and *Nimbahera* cotton. We call a cotton by the name of the district in which it is grown. We sell the cotton by the names of the place, Ujjain, Mandsaur, *Neemuch* and not according to the quality. The *malvi* cotton is good in staple but the ginning percentage is very low.

Gwalior.]

MR. NARAYAN DAS.

[Continued.]

I have dealings in both qualities. I have got a factory at Nimbahera. Nimbahera is a medium staple cotton and it is nearly *Oomras*. Once I shipped it to Liverpool and it was sold as *Oomra* cotton. It was sold before the war at about 3½d. a pound but I do not remember the exact price. I have a pressing factory at Mandsaur which presses two kinds of cotton. One is *Neemuch* and the other is *Nimbahera malvi*. The former is grown in half the Mandsaur district on the north side while the latter portion grows the *Nimbahera (malvi)* cotton. *Neemuch* cotton is also a medium staple cotton. The cotton grown in Mandsaur is *malvi* cotton. I have also a ginning factory at Jaora where I mostly live. I press *malvi* cotton there.

6049. I have some figures here of average yield. The figures that I shall give first are obtained from Jaora, and relate to *malvi* cotton. Last year the yield per acre was 38 lbs. of ginned cotton. The average for last five years is 45 lbs. and that for ten years is 43 lbs. This year we expect six lbs. per acre. Now as to Mandsaur taking last year's figures we sowed 85,000 acres both with long and short-staple. 65,000 acres were under long-staple cotton and 20,000 acres were under short-staple cotton. I cannot give you the exact figures of yield as in case of Jaora but I can give you the figures for pressing. Of the yield from the 65,000 acres, I pressed 8,000 bales; of the medium staple cotton that was grown on the 20,000 acres 13,000 bales were pressed at *Neemuch*. There are two *tehsils*, *Nimbahera* and *Dungla*. The total area under cotton is 13,581 acres and the total yield about 27,00,000 lbs. ginned-cotton. The average yield is about 200 lbs. per acre which is five times as great as that of Mandsaur Jaora long-staple cotton. The weight of the bales is 400 lbs. and the size is ten cubic feet (40 × 17 × 19). I first erected a ginning factory at *Nimbahera* in 1898 and in that year twenty thousand maunds of *kapas* were ginned. Last year I ginned 90,000 maunds of *kapas*. As I have got the only factory at *Nimbahera* and practically the monopoly of that place, I can give you accurate figures of the production of that district. I am quite sure that all that cotton came from that district. The production of *Nimbahera* could not be exported unginned. An export duty would be charged on all cotton exported and so we could get that figure and find out the field. The ginning percentage of *malvi* cotton is 11 to 11½ lbs. of lint to 40 lbs. of *kapas*, that is 27½ per cent. For *Mewari* cotton it is 13 to 15 lbs. of lint to 40 lbs. of *kapas*, i.e., 32½ to 37½ per cent. The shorter the staple, the greater the ginning percentage; the longer the staple the less the ginning percentage. The long and short-staple cotton is all mixed in the field.

6050. There are some fields in the *Udaipur* State where exotic cotton is grown but in a very little quantity. So the cultivators do not care about it because owing to the small quantity the buyers do not pay a higher price for it. The cultivators of the district chiefly look to the ginning percentage and not to the superiority of the cotton. Two or three years ago I brought the matter to the notice of the Hon'ble Mr. Colvin, who was then the Agent to the Governor General in *Rajputana* and told him that there were opportunities for exotic cottons to be grown in the *Newar* district.

6051. I think there is a future for good cotton. But cotton will have to be selected and kept separate and a buying agency will have to be formed. I am quite willing to pay a higher price for better staple cotton if it paid me to do so. In a commercial way, we always try to obtain a profit. That is human nature. If long-staple cotton fetched a higher price, I would also give the cultivators a better price. But in my opinion, at the present *malvi* cotton will not beat the short staple an account of the high ginning percentage of the latter and there is not sufficient difference in price in *Bombay*. Fine *Akola* fetches nearly the same price as pure *Ujjain* cotton. The price of *Akola* cotton to-day is only Rs. 30 lower than *Broach* cotton per *khandi*. This difference is not sufficient tempting to induce the cultivators to leave their present cotton with its higher percentage cotton and to grow *Ujjain* cotton. If you were to pay double the difference, i.e., Rs. 60 still the cultivators will benefit on the present yields. Varieties of long-staple cotton which can give high ginning percentage must be introduced and then the difficulty will be solved.

6052. *Surat* and *Broach* cotton have never been grown here. Last year some *Cambodia* seeds were given out in the *Mandsaur* district but the results are not hopeful.

6053. There is disadvantage in the trade names of our cottons. If our cotton were classified and sold regularly under its proper name it would obtain better prices. For instance, *Neemuch* and *Nimbahera* produce cotton which is better than *Bengals* and is equal to *Oomras* but in *Bombay* it is getting Rs. 40 to Rs. 50 less per *khandi* than *Akola* cotton. This is on account of the name and not on account of the quality of the cotton. Last year it happened that some merchants in *Bombay* purchased one lot of our *Neemuch* cotton and when it was surveyed, it was classed as equal to *Akola*, but if it had been sold as *Neemuch* it would not have obtained the proper price. I should like a proper classification made in *Bombay*. I have not suggested this to the *Bombay* Cotton Trade Association but last year I found that our difficulties were increasing when a press in the neighbouring State of *Udaipur*, which deals with only *Bengal* cotton, began to pour in their cotton here by booking it to *Neemuch* and *Nimbahera* and again re-booking it to *Bombay* and thus tried to spoil our name. Then I suggested to the railway authorities that such transactions should be stopped and that the good name of *Neemuch* and *Nimbahera* should not suffer. But the railway people did nothing. I did not get a written reply but they verbally promised that they would consider the matter, but that they were not authorised to detain cotton. It would not pay us to book our cottons to *Akola* to fetch a higher price, as the distance is so great that it would not pay. *Neemuch* and *Nimbahera* are situated in the middle of both short staple and long-staple districts.

6054. (Mr. Wadia.) I do not think that the figures relating to production in the forecasts are correct.

6055. The cotton from *Bhilwara* in *Udaipur* which is booked to *Neemuch* comes in full pressed bales and is re-booked to *Bombay* to get the price of our cotton. The State should prohibit this. The bales are not always marked by the pressing companies. I consider that it would be a good thing if pressing factories were compelled to stamp their names on the bales before they leave the factory. The names should be stamped on the flat sides. If they were stamped on the top, they would not remain. The railways should be instructed to stop booking fully pressed bales from one station to another where there are no mills. I cannot understand why fully pressed bales should come from *Bhilwara* to *Neemuch*, unless it is to cheat the merchants and purchasers by rebooking the cotton from a superior station. So, in my opinion, the best thing to do is to have the name of the press stamped compulsorily on the bale by law. The Railway Department would have to notify the stations where there were mills.

6056. As to damping, in some presses water is put on the cotton but not to a great extent. It is chiefly put in harsh cotton. The colour of the staple cotton is not good and if water is poured on it, it will make it worse. *Malvi* cotton is not so good as *Akola* in colour. *Neemuch* cotton is good in colour and it is nearly equal to *Akola* cotton. Last year it was passed as *Akola* cotton and only Rs. 2 per *khandi* was deducted.

6057. I have seen saw ginned cotton once in *Bombay*. A sample was shown to me by Messrs. Marshall and Sons. I was told that it was *Khandesh* cotton. The cotton was better than that of our gins. The staple was not cut and it was cleaner than roller ginned cotton.

Indore.]

Mr. NOOR MOHAMMAD SOMJEE.

6058. The freight to Bombay from Neemuch is Rs. 1-1 per maund for fully pressed bales. That is very high. The freight has been reduced for grain and other commodities but not on cotton. We want a reduction in the freight of cotton as has been made in the case of other commodities.

6059. I suggest that Cummin's press be introduced, because it is a very useful press. It can press a bale of seven cubic feet, without spoiling the quality. The bale is much smaller than that turned out by the Nasmyth Wilson Press. When shipping to Liverpool we pay less for bales pressed by Cummin's press. 100 bales pressed by the Cummin's press measure seventeen to eighteen cubic tons whereas 100 bales pressed by the Nasmyth press measure 26 to 28 tons. This difference is very important when it comes to the question of freight. I strongly advocate the introduction of Cummin's press in India. Where freights are based on the dimensions of the bales, the smaller bales make a great difference in the cost of freight under the high rates prevailing as at present. The charges for hoops and gunnies are also reduced. Cummin's press turns out seventy bales an hour against thirty bales per hour for Nasmyth's. I do not know whether the shipping lines have increased the freight on bales pressed by Cummin's press as compared with those pressed by Nasmyth's. But even so Cummin's press is preferable as the railways will require fewer waggons.

ANNEXURE I.

Letter to the Traffic Superintendent, Bombay, Baroda and Central India Railway, Ajmer.

I write to say that the cotton at Bhilwara, Barl and Kapsin is Bengal short-staple while the same at Nimbahera and Mandaur is long staple, and for this reason it is held superior to that.

It is heard that the merchants at the stations book their full pressed bales first to Nimbahera and thence to Bombay in order that their cotton may be taken as superior and equal to Nimlahera cotton, and such bales do not bear any mark either of said places, if they do so it is a fair fraud. In addition to this it leads to unnecessary trouble to railway at this time of restriction and while the Nimlahera cotton pressed bales remain unbooked for a long time; therefore would you be good enough to stop this sort of business totally, so that no loss may incur to the cotton merchant at Nimlahera, and oblige?

ANNEXURE II.

Proposed draft to be advertised in papers. Important information to cotton purchasers in Bombay.

The cotton at Bhilwara, Barl and Kapsin is Bengal short-staple while the same at Nimbahera is long-staple superior to that and nearly equal to Akola fine.

Recently merchants continue to book their inferior cotton to Nimlahera without bearing any railway mark or with mark of Bhilwara, etc., and from Nimlahera they rebook it to Colaba for sale bearing railway mark of Nimlahera. The sole object of their doing so is that their cotton may sell at Bombay as Nimlahera cotton obtaining higher price.

The cogent distinction between Bhilwara and Nimbahera bales is as follows:—

- (1) The Bhilwara bale has twelve bindings and Nimlahera bales has fourteen bindings.
- (2) The Nimbahera bales have their factory monogram written or sealed on their flat side.

XII.—Indore.

Mr. NOOR MOHAMMAD SOMJEE, Office Manager, Indore Malwar United Mills, Ltd., Indore.

EXAMINED AT INDORE, NOVEMBER 23RD, 1917.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

6060. (1 and 10) Experience.—Before entering upon an explanation of the various points set forth by the Indian Cotton Committee in connection with the Indian cotton problem which has these days engrossed the attention of the Government as well as of the commercial world, I must introduce myself as one who has been stationed at Indore in charge of the Indore Malwa United Mills for the last eleven years. In my capacity as Manager of the above mills, I have had opportunities of purchasing cotton for the feed of the mill in my charge every cotton season in very large quantities and also all the year round in comparatively smaller quantities. This brought me into close contact with agriculturists and especially with those that cultivate cotton, yet having had very few opportunities of observation with regard to the agricultural processes and operations, progress of crops, proportion of area under cotton cultivation, etc., to those under grain cultivation, my explanation will show total absence of mathematical calculations and thus is likely to make an impression as being more superficial than scientific, but I believe it will not fail to give a general idea of how cotton cultivation is carried on in this part of the country.

6061. (2 and 11) Varieties.—To turn to the main subject, the market of Indore to which specially my purchases are restricted never brought to my view, during my experience of eleven years, more varieties of cotton than two, i.e., *Nimari* and *malvi*. *Nimari* cotton is generally grown in the District of Nimar of the Indore State, from which it derives its name. This *Nimari* cotton growing tract lies southward of Indore extending along the valley of the Narbada. It is a cotton of *short-staple* and much lint giving better ginning percentage than long-staple cotton and is useful for spinning lower counts ranging from 10s. to 12s. *Malvi* cotton is a cotton of *long-staple* with lower ginning percentage than *Nimari* cotton and is useful for spinning higher counts—say up to 20s.

6062. *Deterioration of malvi cotton.*—Although the above two varieties yet retain their names by which they have been known from the beginning, their qualities seem to change year by year and, in the case of *malvi* cotton, marked deterioration in quality is observed and it is feared that in course of time *malvi* cotton will be considered as traditional. The above deterioration in quality is, I believe, mainly due to (1) mixture of seed of higher quality of cotton with that of the lower quality, (2) absence of desire in cultivators to select of particular sort of seed for sowing, (3) cultivators' ignorance of places where good seed is obtainable,

Indore.]

Messrs. J. W. NORRIS and W. HARTLEY.

nearer to Indore than it is to Ujjain and therefore Ujjain does get only one quality but the *Nimari* cotton comes here. I cannot say positively if American seed can be brought in this bazaar. They do not call it American seed but they call it *bani*. *Bani* has a different meaning in each district. I have not heard of *vilafi bani* in this district. I have seen some cotton from Neemuch district which contained large seeds like American seeds. It is mixed *Mauri*. I can spin Branch about two counts higher than *malvi*.

Mr. J. W. NORRIS, Spinning Master and Mr. W. HARTLEY, Manager, Malwa United Mills, Indore.

EXAMINED AT INDORE, NOVEMBER 24, 1919.

Written Statement submitted by Mr. J. W. Norris.

6083. *Deterioration of the cotton.*—I can only say that the cotton we have been working the last year or two is not as good as it was when we first started the mill. It appears to me that different classes of cotton are mixed together, and baled up, caused by the ginning factories either mixing the cotton themselves or not keeping the seeds of cotton ginned, separate, and these seeds being sown again by the cultivator. In testing the strength of our cottons we get a big variation in pounds pulled, this showing that the cotton is not of uniform quality. In past years we did not get so much variation. We have had a lot of trouble with hard lumps coming in full pressed bales caused by pressing the cotton whilst wet.

Written Statement submitted by Mr. Walter Hartley.

6084. *Deterioration in Central India cotton.*—I have been engaged in the Malwa United Mills since 1909, as Inside Mills Manager and Weaving Master. In such capacity, I have not come into contact with either the cultivators or the dealers in cotton produced in Central India. This branch of business in connection with our cotton mills has been attended to by our Mr. Noorinohamad Somjee, Office Manager, who has from time to time purchased practically all the cotton required for consumption in our mills. My experience during the past nine years is that the local cotton, *malvi* and *Nimari*, has deteriorated every year in quality until the last crop was almost unworkable. The cause of this deterioration in *malvi* and *Nimari* has chiefly been caused by the cultivators using mixed seeds of higher and lower quality with the result that the plants in the field cross fertilize and the crop of cotton to-day is a mixture of various grades.

6085. *Remedies.*—It appears to me that the only remedy for the present state of affairs is to have all ginneries under State control with proper supervision. Cotton seed from best *malvi* and *Nimari* should only be issued to the cultivators by responsible officers appointed so that the crop would improve year by year instead of deteriorating, which has been the case of recent years. The counts spun in our mills from *Nimari* and *malvi* cotton are from 12s. to 20s. and if we could only obtain the former quality of *malvi* and *Nimari* cotton; the same would be quite suitable for our requirements in the manufacture of our class of goods both plain and fancy.

6086. *Factory labour.*—At present our mills are suffering on account of shortage of labour, but I am of opinion that such difficulties would disappear with the supply of suitable local cotton. Most of our work people are paid by piece work, so that with the working of better cotton throughout the various stages from card room to the loom our work people would become more contented and efficient, and therefore remain at their work for longer periods.

MESSRS. J. W. NORRIS AND W. HARTLEY called and examined.

6087. *President.*—We have been here since the mills started in 1909. The cottons that we deal with here are *malvi* and *Nimari*. There has been a marked deterioration in the cotton during the last four years. We put in a statement showing the comparative tests. There were no variations before 1915.

6088. (Mr. Norris).—I attribute the deterioration to carelessness in the field and in the gins. The gins are not cleaned out and so the seed gets mixed and is resold to the cultivators. The biggest responsibility rests with the ginneries. I would suggest that different gins should have different cotton to gin, one gin should gin *Nimari* cotton, one *malvi* cotton and so on. Even in one ginning factory they could be ginned separately in cases in which there would not be enough cotton to work otherwise. It is separate ginning that is required. The cultivator will then get a better strain of seed. There are particular parts of the district from which we get a better grade of cotton than others. Kanod cotton is the best that can be had here. It is *malvi* cotton, the best I should say. I know of no special reason for that.

6089. (Mr. Hartley).—Probably the nature of the soil may give better results in that tract. There would be used to be no mixture and no variation at all. But there was great variation last year even in Kanod.

6090. (Mr. Norris).—From our point of view for the class of work that we do in these mills, what we want is a uniform staple. The *malvi* staple is a very good staple, when it is pure *malvi*. In 1910, we used to spin 20s warp and 26s weft out of it but that is very difficult now. It is very hard to say what you can get out of it now. We have to put a lot of Bombay cotton in to get 18s out of it. The great thing is the variations.

6091. (Mr. Hartley).—That proves that the cotton is mixed now. For the requirements of the local mills and the classes of spinning and weaving that we do, the substitution all over of an even *malvi* would be quite as much as we would ask. So far as our class of goods goes *malvi* gives us all we want. If American were introduced we should have to alter our machinery. As spinners and weavers we are in favour of the policy of getting *malvi* back to the standard, it was eight years ago.

6092. (Mr. Wadia).—I would certainly recommend that certain ginneries should be set aside to gin particular classes of cotton. Legislation would, I suppose, be necessary to confine gins to one class of trade. Ginned seed is sold to the cultivator mixed. That is one of the chief difficulties of course if the Agricultural Department gave out pure seed that would meet the difficulty to some extent but State supervision and State control would be necessary. If the gins were licensed under approved proper supervision, that would improve matters.

6093. *The Factory Act* applies to this State, except as regards the working hours. We work from light to dark. We work about 10½ hours in the winter and 13½ in the long days.

Indore.]

Messrs. J. W. NORRIS and W. HARTLEY.

[Continued.]

6094. It is quite usual to get the local cotton mixed with stones, pieces of the wooden roller steps, dirt, etc. We sometimes lose as much as 27 per cent. in the blow room. The average used to be about 14. Now it is as high as 15 to 27. That loss is caused by the ginning people putting in rubbish called "*kitty*" after ginning. *Kitty* is placed in the cotton to increase the weight. Our own loss when we gin cotton is as low as nine or say ten per cent. I think that all this kind of adulteration is deliberate on the part of ginner. I would certainly make it a condition of licensing a ginner that, if damping and adulteration were resorted to, the license would be liable to forfeiture. Damping is carried on to an extraordinary degree. I have seen hose pipes being turned on to unpressed bales (*boras*) for half an hour before they were sent to Bombay. I have also seen ginned cotton damped before pressing. The sample I produce shows how cotton has been damped. This was in Indore, in one of the local gins. *Kapas* is sometimes mixed with lint owing to its being thrown over the gins but we get that knocked out in the blow room. There is not very much unginned cotton, in the ginned cotton. The chief complaint is the mixture with sand, *kitty*, leaf and other things and also damping.

6095. (*Mr. Hodgkinson.*) (*Mr. Norris.*)—If longer-staple cotton were used, we could increase production. We should be able to reduce the amount of twist put in the yarn and in consequence, production would be increased.

6096. (*Mr. Hartley.*)—There is scarcity of labour in Indore. One cause of the shortage of labour is that if the cotton does not work satisfactorily through the different departments of the mill, the work people naturally become discouraged on account of the bad results from the bad cotton. The work in every department is mostly piece work and; if the cotton were working better; then we should have better average attendance. This applies to all departments. We do not attribute the shortage of labour to the existence of more mills. That was a temporary cause only. We have partially trained from five to ten thousand men over a period of eight or nine years. These go to the fields and come back year after year. If the *malvi* cotton was the same as it was seven or eight years ago, then we should have no more labour difficulties. Of course if I could get a cotton slightly shorter than *malvi* but quite regular, it would meet my purpose better than an unknown mixture. What we want is a uniform cotton.

6097. There is one suggestion I should like to make as regards the productive power of the soils in Central India. I have grown vegetables and roses at Indore. I find that the Indore soil, if it is treated with leaf mould or soot shows a marked improvement. The outturn of Indian cotton at present is only eighty lbs. per acre against 200 in America. This might be greatly increased. We have from our own mills sufficient leaf mould and soot to fertilise probably a few thousand acres. We are quite prepared to give it away. The leaf would come from the blow room dust. The effect would be excellent. I have also been over the fields for ten miles round here and I have noticed tons and tons of bones lying on the ground. If these could be crushed, the bone meal could be kept in the State and used as a manure. Bone manure is an excellent manure. I would prohibit the export of bones.

ANNEXURE.

Statement Showing Comparative Tests.

The Indore Malwa United Mills, Limited, Indore. Season 1916-17.

Lot No.	Loss.	Test.	Count.	Turns per inch.	Description.	Variation in test.
	per cent.	lbs.				lbs.
	23-13	51	19-70	20-12	N. Kurampur	28
	22-10	44	19-70	20-12	N. Kurampur	22
	20-12	46	19-70	20-12	N. Sondhwa	23
	16-0	42	19-90	20-12	N. Indore	22
	23-12	45	19-70	20-12	N. Anjhar.	24
	19-11	51	19-30	20-12	N. Dhamned	21
	20-15	32	19-70	20-12	N. Nimarni	25
Malvi Ujjain	13-15	59	19-70	20-12	N. Ujjain	20
	13-9	51	19-80	20-12	N. Ujjain Piplia	26
	15-13	33	19-90	20-12	M. Ujjain Shujalpur	

The Indore Malwa United Mills, Limited, Indore. Season 1914.

Lot No.	Loss.	Test.	Count.	Turns per inch.	Description.	REMARKS.
	per cent.	lbs.				
1 D.	11-14	59	19-90	20-12	N. Dhamana Gin.	15th Feb. 1914 Nimari. Malvi
17 D.	14-5	60	19-70	20-12	N. Anjhar Gin	
27 D.	13-15	60	19-70	20-12	N. Nimarni.	
29D.	11-2	73	19-80	20-12	M. Ujjain Cotton	
30D.	12-0	75	19-90	20-12	M. Kanode Gin	
32D.	12-3	65	19-90	20-12	N. Hill Gin	
	12-6	58	19-70	..	N. Indore Gin.	
	15-	57	19-90	20-12	N. Manavar.	
87D.	14-1	67	19-80	20-12	N. Dharampuri.	
89D.	14-7	58	19-80	20-12	N. Talwada	

In this season variation in test was normal, i.e., 10 to 14 lbs. . . . therefore not noted.

Indore.)

Messrs. K. D. PURANIK and H. BOLTON.

Mr. K. D. PURANIK, Manager, and Mr. H. BOLTON, Spinning Master, Hukamchand Mills, Indore.

EXAMINED AT INDORE, NOVEMBER 24TH, 1917.

Written statement submitted by Mr. K. D. Puranik, Manager, Hukamchand Mills, Limited, Indore.

IV.—MANUFACTURE.

(b) Spinning and Weaving.

6008. (43) Counts spun and market for yarn or cloth.—The principal count spun from the local *malvi* and *Nimari* cotton are from 10s. to 20s. warp and 12s. to 16s. weft. 20s. warp is spun from Kanod cotton. We generally do not use any other cotton than *malvi* and *Nimari*. Our principal markets are local, Bombay, Ahmedabad and Calcutta.

6009. (44) Condition of cotton.—The condition in which cotton reaches the factory is highly objectionable as the *Nimari* cotton is generally very dirty owing to its being full of cotton leaves and dust. *Malvi* cotton is received in a comparatively fair condition but in the case of both the *malvi* and *Nimari* cotton the usual practice of mixing the higher quality with the lower with a view to obtain an average price for the better quality makes the average quality very poor.

(2) The remedy against this practice is, until there is anything like an organization in cotton growing and cotton spinning, that the spinners should run their own cotton at their own factories and should manage to get their cotton picked at the different centres from which they receive their supply by keeping their own men there for making a selection and supervising the ginning.

(3) As almost all the cultivators are illiterate, it is impossible to do anything for improving the quality of cotton by means of issuing bulletins and tracts. The best way would be to make arrangements for starting an experimental farm in each district and after full trial as to which variety would be suitable for a particular district, the selected seed should be supplied to the cultivators at cost price and they should be encouraged to grow that variety by a remission of a portion of the land revenue for a certain number of years, say, five years, the greatest care being taken in the selection of men who could be trusted to put their heart into the work.

Messrs. K. D. PURANIK and H. BOLTON called and examined.

6100. President (Mr. B. B. B.)—The varieties of cotton that we get here are *Nimari* and *malvi*. From the short experience I have had of about two years I find they are deteriorating very rapidly.

6101. (Mr. Puranik).—I have been in this district for more than five years and I have also noticed the deterioration.

6102. (Mr. B. B. B.).—The cotton is dirty and we cannot get the same tests. We used to get much less percentage of blow room loss than we do now. We get much leaf and sand in the cotton. I would suggest that the mills should do their own ginning. It would be then kept under better control. I think that the adulteration and mixing takes place in the ginneries.

6103. (Mr. Puranik).—I think the mixing is more due to the indiscriminate use of seed. The seed is not selected and the crop is mixed in the field and comes mixed to the ginnery. We give the cultivators seed and they say they will use it for their cattle but they sow it in order to make more money. If the spinners did their own ginning, they would have more control over it. I would suggest experimental farms in each district to provide seed.

6104. (Mr. Bolton).—I agree with Mr. Puranik. The best *malvi* that we get comes from Kanod. It is the only cotton that we can use for 20s. warp and up to 26s. weft. It is scarcely good enough for anything above 20s. It is a bit soft. That is the best cotton that we get locally. The *malvi* from Dhar is the second best. That gives about 60 lbs. test. There is some mixing even of Kanod cotton but I get it fairly even. Whether all the cotton coming from Kanod is really grown there, I cannot say. Taken all round Kanod is of fairly uniform staple. The loss in the blow room of Kanod was at first about twelve to fourteen per cent., now it is eighteen to twenty per cent. So that Kanod is also deteriorating. We get a lot of damped cotton. We get cart loads of it. All the sides of the bales have to be thrown away. There is deliberate watering of bales after pressing. The ginneries are not very careful about different kinds of cotton. You will see a heap here and a heap there and the wind blowing and scattering them all about. In addition to ginning by spinners, I would suggest control over outside ginneries: I would suggest a travelling supervisor, a Government official, and lay down the various conditions under which licenses might be held. I would suggest legislation.

6105. (Mr. Wadia).—When I started, I spun with *malvi* from Kanod, 20s. warp, 24s. reeling and 26s. weft. I have always been able to give satisfaction as far as strength and every thing else was concerned with Kanod cotton.

6106. (Mr. Puranik).—The varieties of *malvi* coming from the Ujjain State are not uniform. There are different classes of *malvi*. Because this cotton happens to come from Ujjain, it is all called *malvi*. We spin it to 16s. warp.

6107. (Mr. Bolton).—I have been here since the erection of the mill was completed eighteen months ago. In the last eighteen months there has been great deterioration both in purity and staple. We cannot do the same tests as we used to do. We get damped cotton so hard that we cannot put it through the opener as it would break the spikes.

6108. (Mr. Puranik).—Bales are not placed under cover and it is on account of the exposure to rain that the sides get so hard. I do not think there is artificial damping by the ginneries. We get a lot of leaf mould and stones coming in our bales. We also get a lot of corn pods. The loss in the blow room in the case of *Nimari* cotton this month was 24 per cent. but up to the spindle point it was 35 per cent. On a sample at the beginning of this year it was much less, about eighteen per cent. *Nimari* cotton being an early crop, it is allowed to stand in the fields for a longer time than is really necessary as the cultivators are engaged in sowing wheat and other winter crops and they pick up the cotton only when it falls to the ground and is mixed with earth. The dirt in the cotton is due to that. Last year the rains extended on to October. They knocked the cotton down and it was picked up with leaf on it. In my opinion, had the cotton been picked out straight from the boll instead of from the ground, there would not have been so much loss in the blow room.

Mr. A. SCORDOS, Agent, Messrs. Ralli Bros., Indore.

EXAMINED AT INDORE, NOVEMBER 24TH, 1917.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

(a) "Deshi" short-staple cotton.

6121. (1) Experience.—I have been stationed in Indore for the last six years. I am not in direct touch with cultivators.

6122. (2) Varieties.—The varieties of short-staple cotton grown here are known as *Nimari* but each varies in staple and quality.

6123. (7) Conditions affecting increase in area.—The area under short staple cotton is yearly increasing. This is due to the mixing by buyers and in a great part to the indifference of the cultivator who does not buy selected seed for sowing.

6124. (8) Uses of seed and seed selection.—The seed is used for fodder but in normal times most of it is exported to the Punjab or goes for home export. As far as I know, no hand ginned seed is selected for sowing purposes.

(b) "Deshi" long staple cotton.

6125. (11) Varieties.—There is only one variety of long stapled cotton in this district and it is known as *malvi*.

6126. (16) Suitability of existing varieties.—I would not recommend any other superior type being introduced. I am of opinion that, if the *malvi* type of long-stapled cotton (which was being marketed pure some years ago) could be grown again, it would prove the best for this district.

6127. (23) Importation of seed.—I am not in favour of imported seed from America or Egypt. If right Indian seed can be sown in particular soils it will prove that it is the most satisfactory.

II.—COMMERCIAL ASPECT.

6128. (30) Local trade customs.—The cotton is brought in the market for sale as under:—As *kapas* as machine ginned. The *kapas* is brought in by the farmers for sale or by petty dealers who have previously bought from the farmers. The ginned cotton is generally bought up by local merchants and sent on to a bigger market for sale.

6129. (31) Standardization of commercial names.—The commercial names are (for this district's cotton) "Fully Good" to "Fine," "Fully Good" and "Good" and I consider them suitable.

III.—STATISTICAL.

6130. (33) Improvement of cotton forecast.—The forecast figures at present are nearly correct so far as the area sown is concerned, but the forecasts of outturns in quantity at times differ with the actual production.

6131. (34) Improvement of other statistical information.—I would point out that the fortnightly cotton press returns in their present form are very unsatisfactory, the figures received from Native States which are at present collected by the Bombay Chamber of Commerce being particularly unreliable. I would suggest therefore that all these figures should be taken over by the Department of Statistics, and I would recommend, in this connexion also, that a system of licensing of ginning and pressing factories should be instituted as I think that if this were done correct figures could be easily obtained. The system of licensing factories in the Native States might at a later date be introduced with good results. I would also suggest that the Department of Statistics should employ a staff of travelling auditors to collect the figures from presses, mills, railways, etc., and the figures thus collected would afford a valuable check on the fortnightly returns.

(2) I would also point out that the cotton crop forecasts might be ameliorated by drawing the estimate to a greater extent than is the case at present from non-official agencies, such as local merchants, mills, gins, presses, etc., and too much reliance should not be placed on the official reporting agency which is at present a revenue agency rather than an agricultural reporting agency.

6132. (35) Publication of Liverpool and Bombay prices.—I do not consider publication of Liverpool and Bombay prices at up-country markets necessary as these prices are already known through Bombay agents and up-country merchants.

Mr. A. SCORDOS called and examined.

6133. (President.) I simply deal with merchants. I buy ginned cotton: I buy very little *kapas*. I have been in Indore for six years. Only two grades of cotton come into Indore namely, *Nimari* and *malvi*. More *Nimari* comes in than *malvi*. *Nimari* does not come in in a very clean state; *malvi* comes in cleaner. The quality of *Nimari* is going down; the quality of *malvi* is practically the same but the staple is deteriorating. As to the best policy to be pursued, I think it would be best to stick to the old *malvi* type and try to get it back as pure as it was about ten years ago. I have not seen any American cotton in this state. I have seen a little Cambodia.

6134. There is not much damping or deliberate adulteration of cotton. It is much less than it used to be some years ago. I have not noticed any deliberate watering or adulteration in the ginning factories. It occurs mostly in the presses and is a great deal less than it used to be.

6135. As to the accuracy of forecasts, as far as the area goes, they are practically correct but the outturns vary tremendously. We make very elaborate forecasts ourselves which differ considerably from those made by Government. We write to every sub-agent, who questions all the farmers and *patels* coming into the market as to the condition of the crop and makes up his estimate accordingly. We go on the rupee basis and when we have worked it out in bales, we get the actuals. We fix our normals every five years. Either Government has not sufficient staff to get their forecasts made accurately or else they do not avail themselves

Indore.]

Mr. ABDUL HUSSAIN MANJI.

of the information which is equally available to them as to us. The *tahsildars* ought really to be able to know much better about the crop than we do. The area is fairly accurate.

6136. I only see the press returns in the Indian Trade Journal. They are usually blank for Native States. The trouble about them is that they are not sent complete because their submission is more or less voluntary. It would be much better if they were made compulsory. We make up our own returns daily or every two or three days. We get the information direct from the gins and they give it us willingly. Wherever there is a pool or a combine, it is very easy to get information. I am not prepared to express a definite opinion in regard to the licensing of gineries.

6137. I think the present classification, "fully good," "fine" and "superfine," is suitable for this tract.

6138. (Mr. Hodgkinson.) Much cotton is stored in the open or in sheds, open on the sides. Properly constructed sheds would mean greater expense to the merchants.

6139. (Mr. Henderson.) The two qualities of cotton, *Nimari* and *malvi*, both go down to Bombay under the same name. In Bombay, these cottons are known as Indore short-staple and Indore long-staple. *Malvi* is long-staple and *Nimari* short-staple. They are not bought in Bombay until they actually come into the market. There is no forward buying. It is only a spot market. Both *malvi* and *Nimari* are under *Oomras*. They are absolutely different but they come under *Oomras*. Indore cotton is the same as Ujjain and the quotation for it is Rs. 20 under Broach. Indore when available is quoted separately. *Malvi* cotton is a little better than Berar but not so good as Broach. There is not sufficient justification for giving it a separate classification. If enough were available, it would be an advantage to give it a separate classification.

6140. (Mr. E. J. Latta.) We buy ready-ginned cotton mostly; we cannot touch *kapas*. The difference in price between fully good and fine is from Rs. 10 to Rs. 20 per *lhandi*. The difference between *malvi* and *Nimari* of the same class would be about Rs. 20 per *lhandi* of 784 lbs. of lint. *Malvi kapas* is all taken up by the mills. The mills have their own gins and so can afford to pay a higher price for it; they pay what they pay for Broach or even more. The ginning percentage of *malvi* is less than that of *Nimari*, but the mills pay a premium for it. The difference depends on the reason. The ginning percentage of *malvi* works out at 27 to 28 and that of *Nimari* at 33 or 34. We buy very little *malvi* as the mills use it all or it is stored or speculated in. *Malvi* has been deteriorating for the last two years. Indore *malvi* is classified below Ujjain *malvi* in Bombay. Kanod is about the same. I quite agree that the standardization of the varieties of cotton would be a very important step. It would be much easier to give proper prices if cotton were standardised. At present my difficulty is that I do not know to what extent the staple of staple cotton is pure or mixed, even the staples that come from certain districts. The staple of the cotton from Dhar and Kanod is deteriorating. If there was one kind of *malvi* or one kind of *Nimari*, it would help the trade tremendously. Six or seven years ago in Sanwal there was a beautiful cotton. It used to be sold on type. We cannot get that cotton now. Even *Nimari* has deteriorated tremendously both in class and in staple. This year it will be worse than ever. The seed last year was particularly bad. They say that the *kapas* is very bad this year. I have not seen any American cotton in this market.

Mr. ABDUL HUSSAIN MANJI, Manager, R. G. Hussain Ginning Factory, Indore.

EXAMINED AT INDORE, NOVEMBER 24TH, 1917.

Written statement.

II.—COMMERCIAL ASPECT.

6141. (30) Local trade customs.—Ordinarily the cultivators carry the raw cotton to the nearest ginning factory. If they cannot get good prices there, they take the raw cotton carts to the distant cotton market; and sell the same through brokers. In the *mofussil*, in some cases, *banias* make advances to cultivators on condition of getting delivery of certain quantities of raw cotton at rates previously agreed upon. In some cases also, forward contracts of purchase at rates previously agreed are made without any advance. These *banias* get the raw cotton ginned in the nearest factory and send it on to their agents to some central cotton market.

6142. (31) Standardization of commercial names.—There are two chief kinds of cotton in these parts, the *malvi* and *Nimari*. The sub-varieties under each are many though the difference in quality in each kind is not very appreciable. The varieties of cotton in Malwa and Nimar are suitable for local needs. Better quality of cotton would be only necessary if mill owners want to turn out finer yarn or for export trade. But there is enough market in India for cotton now produced. At present the mill owners have more than enough market for short-staple stuff. *Malvi* and *Nimari* are the standard names of the two main varieties.

III.—STATISTICAL.

6143. (35) Publication of Liverpool and Bombay prices.—It will be of great use to the public as well as to the cotton merchants if the Bombay and Liverpool daily cotton rates are published in up-country places.

IV.—MANUFACTURE.

(a) Ginning and pressing.

6144. (36) Type and number of gins and presses.—In our factory, there are twenty roller gins of Platt Brothers. We have got one Hodget and another Nasmyth Press, the size of our box in Nasmyth is 4' x 1½' and in the other press it is a little smaller.

6145. (40) Factory labour.—Great difficulty now-a-days is felt in obtaining labour.

6146. (41) Conditions of cotton.—The carts of raw cotton come to our factory covered. But there is some quantity of leaf and dust. In order to prevent this, the picking and collecting operations must be improved.

INDIAN COTTON COMMITTEE :

Mr. C. M. SAMEL BECHER.

V.—GENERAL.

6147. (46) *Attitude of buyers to improved cottons.*—Buyers have not so far encouraged the growth of improved cotton by offering premium. But even by receiving premium, the agriculturists in the present state of agriculture would not perhaps find it profitable to undertake the cultivation of long-staple cotton except in canal areas; the process of water-lifting is very crude and costly. The concentrated manures are not in this country. The cultivators cannot get a decent margin of profit by growing long-staple cotton. Further there is the soil difficulty. American or Egyptian cotton grown on Nimar soil might be an absolute failure. The first step should be to try *malvi* cotton in Nimar and Broach and other superior varieties in Malwa. If the experiment is found successful then after some time it may be possible to introduce Egyptian or American seed. Irrigation in these parts is very defective and the agriculturist is idle and unintelligent. Agricultural labour also is very poor. Under the circumstances, there are insuperable difficulties in introducing improved varieties of cotton.

Mr. ABDUL HUSSAIN MANJI called and examined.

(Translation.)

6148. (Mr. Wadia.) I have got a ginning factory of twenty single gins at Siagunj near the Railway Station. The gins are all Platt's single roller gins. I can tell from what districts the various kinds of *kapas* brought to the ginning factory come. Only two kinds of *kapas* are brought to my factory—*Nimari* and *malvi*. About ten-sixteenths of the crop comes in a pure state and the rest in a mixed condition. In the remaining six annas of *malvi*, there is a mixture of *Nimari*. When I get pure *malvi*, I gin it separately but it all depends on the merchants. If they wish the *kapas* be ginned in a mixed condition I gin it accordingly and if they bring pure *kapas* and wish it ginned separately, I comply with their request. The majority of the merchants want their *kapas* ginned in a mixed condition.

6149. I have also got a press in my ginning factory. Some merchants sometimes damp their cotton deliberately in my factory compound before pressing but this happens only in a few cases. They use my hose pipe for damping purposes. I do not charge for it. After the cotton is ginned and slightly damped, it is passed through the cotton opener and then it is pressed. So I do not think the merchants get much advantage of weight by damping but the damping is done to remove the harsh feel of the cotton. If the cotton is not damped, it cannot be pressed in hot weather in bales of more than 308 lbs. approximately. Most of the water- ing is done in the month of May when the weather is very dry. There are no godowns in my compound where I could store ginned cotton which is packed in *boras* (loose bags). The *boras* lying out in the compound often absorb the moisture caused by heavy dew in any sand or dirt but cotton is so badly picked, 6150. The merchants do not adulterate the cotton with any sand or dirt but cotton is so badly picked, that there is dirt in it from the fields. Some of the merchants to get clean cotton pass the cotton through the opener three or four times but do not succeed in getting the dirt out. This year the crop was damaged owing to heavy rain.

6151. I mostly gin cotton on account of the merchants but sometime I buy *kapas* on my own account, gin and press 100 to 200 bales and sell it in Bombay or here if the market is favourable.

6152. There is a ginning pool in this district. Ginning charges at present are Rs. 3 per *mani* of six maunds. Last year the pressing charges were Rs. 5-4, but owing to the dearth of hoops and ginneries the year they will be Rs. 5-8. I have to pay a contribution of Rs. 1-1 to the ginning pool. The contribution to the pressing pool is, I think, also about Rs. 1-10 but I cannot say exactly. I am a member of the pool. The bulk of the accounts of the pool are carried on by clerks and there is very seldom a meeting of the members in each factory. There are four ginning factories in Indore not counting the gins that are in spinning mills. The number of factories that are worked in based on the estimate of the crop. If the crop is a good one, all the four factories work but if the crop is not a good one only two factories work.

6153. This year the price of ginned cotton is Rs. 165 per *bhoja* of four maunds for delivery in the market of Fagan. That is for *malvi* cotton. The price for *Nimari* cotton on that basis would be from Rs. 142 to per *bhoja* of four maunds. The price 165, I said was for pure *malvi* cotton but if *Nimari* is mixed with cotton. I should see a sample, estimate the extent to which it was mixed and reduce the price accordingly the percentage of mixture.

6154. I certainly think that the local mills would pay a premium if better and long-staple cotton be grown in this district as these mills have now to go to the expense of importing cotton from Narmada. Broach at much higher prices and pay the railway freight here.

XIII—Baroda.

Mr. C. M. SAMEL BECHER, Shri Sayaji Mills Co., Ltd., Baroda.

EXAMINED AT NAVSARI, FEBRUARY 13TH, 1919.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

6155. (2) *Varieties.*—As, in our district, there is only one sort of cotton, which is neither staple, I have given my notes in general with regard to the questions. In the Baroda District *rozi* and *goghari* sorts of cotton are generally produced. As stated above, they are little longer and Bengal and a little shorter than actual Broach. These also vary little in staple and class. The *kanvi* is the best, *goghari* the second and *rozi* the third, but *rozi* seems to be disappearing and the *kanvi* is less than the other two. *Goghari* seems to be more appreciated as it gives a better

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be to the advantage of the cultivators as they would get a better price. Sometimes there is only one picking and sometimes two. There used to be two pickings for *rozi*. The second picking was better than the first. There would not be much difference between two pickings of the same class of *kapas* and, if they were ginned together, there would be very little to complain about.

6171. As regards the damping of *kapas*, most of the moisture comes out in the ginning factories. It does not deteriorate the spinning qualities of the cotton to any great extent. Generally before *kapas* is ginned it is opened out and dried in the sun. That takes away a great deal of moisture. Damping does not affect the colour unless the cotton has been kept damp for a long time. I have never seen a hose-pipe used in a press myself but I have heard that it is used.

6172. There are certain difficulties in the way of travelling gins but they could be overcome. They would be advantageous to the cultivators who have to bring their *kapas* into the towns and to sell it to some of the merchants at a lower price than it is worth. Now if the gins were there, it would be very easy for them; they would get their own cotton ginned and the merchants would prefer to buy that cotton as it would not be mixed. The gins would be worked by some sort of portable engine. I have read that something of the kind exists in America. The gins may have been electrically driven.

6173. (Mr. Roberts.) *Rozi* has practically disappeared. There is very little of it. It is not even five per cent of the crop in the Baroda State. The cotton grown in Kanam district is known as *kanvi*.

6174. The blow room loss of Navsari cotton depends on the particular quality. I think it is from seven to ten per cent. The total loss in Navsari cotton up to the spinning point is twelve to fifteen per cent. The total loss in *goghari* up to the spinning point would be about seventeen to twenty per cent. It is a clean cotton but with shorter fibre. I have not used long staple cotton from other parts of India except a little Cambodia which we use for mixing with Navsari. We have a warp from Cambodia and Navsari mixed.

6175. (President.) We send ginning and pressing returns. We send them on printed post cards direct to Bombay. I think they are sent to the Director of Agriculture, Poona.

Mr. JEDANGIR B. TAMBOLI, Ginning Factory-owner and Cotton Agent, Navsari.

EXAMINED AT NAVSARI, FEBRUARY 13TH, 1918.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

(a) "Deshi" short-staple cotton.

6176. (1) Experience.—I have general experience of the East Khandesh district for about eleven years. I am in touch with cotton cultivators.

6177. (2) Varieties.—Now-a-days, N. R. (*roscum*) and Berar short-staple cotton are grown in place of *gaorani* long-staple cotton.

6178. (3) Size of holdings.—About seventy per cent of the land cultivated is under cotton cultivation.

6179. (4) Yields and profits.—The average yield per acre comes to about 4½ (*Bengal*) maunds of raw cotton. The average profit per acre comes to about Rs. 74. The yield per acre varies as various sorts of soil are utilized in growing raw cotton; also much depends upon manure.

6180. (5) Rotations and manures.—Some sow cotton and *bajra* every alternate year, but now a days, high rates induce many to sow cotton every year. Cattle refuse is used as manure.

6181. (6) Comparative returns.—The cultivator gets Rs. 15 to Rs. 20 per acre more in the average by cultivating short staple cotton in comparison with the return from *deshi* long-staple cotton, other *deshi* crops, and exotic cotton. Because long-staple cotton (*gaorani*) is now extinct as the crop grows late, the yield is also less and there is every probability of damage by frost; hence short-staple cotton is preferred. The short-staple cotton crop is early, the average outturn is better and the percentage of lint cotton being also more, cultivators are led to prefer the short-staple. Exotic cotton is tried in very small plots of ground and the results are very discouraging.

6182. (7) Conditions affecting increase in area.—Short-staple cotton area fluctuates largely; the area increases with the high rates and decreases on account of late and scanty rains. Under the present circumstances, there is every likelihood of an increase in the area under *deshi* short-staple cotton, as the rates realized are such that even a six-anna crop will pay more than the full amount of any other crop growing in the same area.

6183. (8) Uses of seed and seed selection.—Cotton seeds are used for cattle food and oils and for sowing. Surplus seeds are taken by exporters to Europe, Kathiawar and the Punjab. Seeds of coarse short-staple cotton are selected. Seeds are purchased from cotton ginning factories, as hand gins are out of use.

6184. (9) General economic conditions.—Many districts that used to grow long-staple cotton are now encouraged to grow short-staple cotton, hence in the long run it is feared that the short-staple cotton will not pay so much as it does now; so Government should try to supply seed suitable to soils of the district, after experimenting for five or six years. Seeds of long-staple cotton, if found suitable to the soils and climate of East and West Khandesh, will be willingly used by the cultivators, if they get the same quantity of crop as they do now by growing short-staple cotton. Government seed depôts will be very useful, as various sorts of seeds will be supplied according to requirements. Government Farms can serve the purpose of supplying seed, so there is no need of a district staff. There being cotton markets in the chief towns of the districts, there is no need for buying agencies. Ginning factories in the districts are more than are required.

(b) "Deshi" long-staple cotton.

6185. (10) Experience.—I have been stationed in Navsari for about 22 years and in Surat district for about fifteen years. I do come in actual touch with cotton cultivators.

6186. (11) Varieties.—There is only one variety of long-staple cotton, generally known in Bombay and foreign markets as "Broach Fine"? it is also known in Bombay now-a-days as Navsari and Surat cotton.

6187. (12) Size of holdings.—About sixty per cent of land cultivated is under cotton cultivation

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[Continued.]

6188. (13) Yields and profits and comparative returns.—The average yield per acre comes to about 2½ (Surat) maunds of raw cotton. The average profit per acre is about Rs. 45.

(2) There was no *deshi* short-staple cotton formerly in these districts but after the introduction of hybrid seeds by the Government Agricultural Farm at Athva (Surat), and since a Cotton Syndicate for purchasing raw cotton from these seeds paid five per cent extra to the cultivators, and also because certain factory owners now pay Rs. 10 per *bhar* (2½ Surat maunds) more, as the percentage of lint cotton in it is greater than that in the *deshi* long-staple cotton, there is every possibility of an increase in short-staple cotton.

(3) Egyptian cotton was experimented upon by the late Mr. J. N. Tata, but it did not pay well in comparison with *deshi* long-staple cotton.

6189. (14) Rotations and manures.—Some sow cotton and *jaur* every alternate year and many sow cotton every year. Cattle dung only is used as manure by a few of the cultivators.

6190. (15) Conditions affecting increase in area.—In my opinion, an increase in the area under *deshi* long-staple cotton in these districts will not be effected by any special conditions. Ginning factories are sufficient in number to meet the requirements of the season. Irrigation is not possible in these districts. Cotton rates being very high, the cultivators take every available piece of ground for cotton cultivation in preference to other food crops and they do not think it necessary to observe rotation of crops. Labour at present is sufficient to meet any increase. As for climatic conditions in the district north of the Tapti, the increase in area depends much upon the early heavy rains, but as far as Navsari and a part of the Surat districts are concerned, even the heavy rains have no effect upon the increase.

6191. (16) Suitability of existing varieties.—In Navsari district, the original *deshi* staple cotton should not be replaced by any other variety, as it is the best in India and is suitable to the soil and climate. In the Surat district, where short-staple cotton is now grown by some cultivators, the long-staple cotton should be replaced.

6192. (17) Prevention of mixing of different varieties.—Mixing of short-staple cotton should be stopped by an Act of Government. Merchants, ginning factory owners and cultivators should be made responsible for mixing the superior quality with inferior stuffs. If the Government cannot come in the way of growing shorter-staple cotton in these districts, the short-staple cotton may be allowed to grow, but the raw cotton should be ginned separately and the seeds should not be mixed with those of the long staple cotton. His Exalted Highness the Nizam's Government has already taken steps to stop adulteration, to distribute suitable seeds and to increase the cultivation of long-staple cotton.

6193. (18) Uses of seed and seed selection.—Seeds are used for cattle feeding and sowing, also for oil by the local mill. They are mostly exported to Gujarat, Kathiawar, the Punjab and to Bombay for Europe. No special selection is being made in respect to seeds. The cultivators purchase seeds from factories for sowing. Hand gins are not used. The demand for seed for sowing is so increasing every year, that thousands of hand gins may be required to meet it.

6194. (19) General economic conditions.—It is advisable to have cotton markets in Navsari, Bardoli and Kim and, if necessary, in Surat, so that the cultivators may have the advantage of getting the best rates of the day. Selling through brokers, sometimes the real rates do not go into the pockets of the sellers, as the middlemen occasionally get the advantage of the rising market.

(2) The soil and climate are suitable for long-staple cotton, and if the Government were to introduce longer staple cotton, it should be introduced after a fair and successful trial of six or seven years. The seeds should be thoroughly acclimatized. In order to prevent deterioration, Government through the Athva Farm should try to provide the cultivators good seeds of the original long-staple cotton without the mixture of the short-stapled one.

(3) Buying agencies will never succeed. Six years ago, one Syndicate was formed in Bombay to purchase *kapas* from the seeds supplied by the Athva Government Farm at five per cent higher rate than that for the *deshi* long-staple cotton. In the middle of the next season, the said Syndicate had to give up purchasing raw cotton, as outturn of lint and quality did not come to their expectations. The growers of cotton from *special seeds* should be induced to give their *kapas* on their own account to Government and that *kapas* should be put to auction, that the real market rates may be realized. Such a step is also necessary for the Bhils of Navapur and Chinchpada of West Khandesh.

(4) Full pressed bales of cotton from Broach district and Anklesar are sent to the railway stations of Navsari and Surat, whence they are forwarded to Bombay with fresh railway receipts on the strength of which the bales are generally passed in Bombay as Navsari or Surat cotton. This sort of practice should be checked.

(5) *Kapas* for ginning and cotton for pressing from districts growing inferior quality are brought by railway and bullock carts for mixing with the superior quality of cotton of these districts. Such importation for mixing should be prohibited by an Act of Government. Exemption should be made for the requirements of local spinning and weaving mills.

(6) One standard weight for *kapas* and for cotton should be fixed by Government for the whole of the Bombay Presidency.

II.—COMMERCIAL ASPECT.

6195. (30) Local trade customs.—*Kapas* is sold by cultivators through brokers to factory owners, who are generally cotton merchants, sometimes four or five months before the *kapas* is ready for picking. In forward contracts, 25 to 100 per cent are paid in advance on the date of the contract. In ready contracts, the value is paid on the delivery of *kapas*.

6196. (31) Standardization of commercial names.—There are no commercial names of various grades of cotton in these districts. It will be better to name *kapas* and cotton after the names of different districts. In northern Gujarat and Kathiawar, *kapas* and cotton are distinctly named.

6197. (33) Buying agencies.—There is no need of buying agencies in these districts as there are many local buyers to purchase cotton by paying better rates than those ruling in Bombay.

III.—STATISTICAL.

6198. (33) Improvement of cotton forecast.—Cotton forecasts published by Government are not sufficiently accurate. The help of an advisory committee of experienced persons, one from each *taluka* of the district, will be useful in framing the forecast. Cotton forecasts are of very little used to buyers and settlers on these sides, as the price generally fluctuates in sympathy with the American daily quotations, and those

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6204. As the Road and Abroad of Mill purchase nearly all cotton in the Navsari district, there is very high effect of the provincial force. In improvement of other statistical information, Cotton press return are always deficient. It is suggested that the Government every fortnight with the number of bales of cotton, the return of exports of cotton with their standard names should be supplied, then the return of the cotton trade.

6205. Publication of Liverpool and Bombay prices. The daily publication of Liverpool and Bombay prices is of very little use to cultivators, as many of them are not in touch with the cotton trade. The daily publication of the cultivators' prices, together with the daily publication of the cotton trade, is of very little use to the public.

6206. Publication of the cotton trade. The daily publication of the cotton trade, together with the daily publication of the cotton trade, is of very little use to the public.

IV.—MANUFACTURE

(a) *General and special.*

6207. (35) Type and number of mills and presses. In the Navsari district, there are 121 mills and 121 presses. The mills are of the following types: 1. Hand-operated, 2. Steam-operated, 3. Hydraulic-operated. The presses are of the following types: 1. Hand-operated, 2. Steam-operated, 3. Hydraulic-operated.

6208. (36) Size of bales. In the Navsari district, the size of bales is 48 in. x 19 in. x 24 in. The bales are of the following types: 1. Hand-operated, 2. Steam-operated, 3. Hydraulic-operated.

6209. (37) Saw and roller mills. In the Navsari district, there are 121 saw and roller mills. The mills are of the following types: 1. Hand-operated, 2. Steam-operated, 3. Hydraulic-operated.

6210. (38) Effect of saw and roller mills. In the Navsari district, the effect of saw and roller mills is to improve the quality of the cotton. The mills are of the following types: 1. Hand-operated, 2. Steam-operated, 3. Hydraulic-operated.

6211. (39) Factory labour. In the Navsari district, the factory labour is of the following types: 1. Hand-operated, 2. Steam-operated, 3. Hydraulic-operated.

6212. (40) Condition of cotton. In the Navsari district, the condition of cotton is of the following types: 1. Hand-operated, 2. Steam-operated, 3. Hydraulic-operated.

V.—GENERAL

6208. (40) Attitude of buyers to improved cottons. From my experience, I can say that buyers of cotton are prepared to encourage the growth of improved cotton by offering high rates.

Mr. JIRANGIR TAMPOLI called and examined.

6209. (Mr. W. J. J.) I am a cotton agent and a factory owner. I work for Messrs. Tata and Sons as well as for other mills. I work here as well as in Amalner in East Khandesh and in Surat. Only one kind of cotton used to be grown here before hybrid seed was introduced by the Government farm at Surat. There was only one kind of cotton and it was the long staple cotton known as Navsari. Navsari cotton is better than Surat or Broach. Navsari cotton used to be marketed in a pure state but now both Navsari and Surat cottons are mixed with short staple. As cultivators used to get five per cent more for cotton grown from the selected seed supplied by the Agricultural Department, they are now led to grow short-staple cotton that fetches about Rs. 10 per *bar* more than the mixing of short staple cotton with long staple *lapas*.

6210. I would certainly advocate that the mixing of short staple cotton with long staple *lapas* should be stopped by an Act of Government. It is for the Government to take action in the matter; they should not allow cotton to be mixed. Navsari cotton is the best in India but it is now being mixed and the quality is deteriorating. His Exalted Highness the Nizam's Government have taken steps to stop mixing.

6211. I would advocate the opening of cotton markets in Navsari, Bardoli and Kim so that the cultivators can get the best price of the day. Now-a-days brokers there are sent out to the villages and cultivators do not know what the price should be. It would be better for the cultivators as well as for the merchants if the cotton were marketed in an open market. The cultivators should be shown the advantages of the market as in Berar and Khandesh. The markets should be controlled by a market committee.

6212. Full pressed bales of cotton from Ankleswar and Broach districts are sent to Navsari and Surat whence they are rebooked to Bombay with fresh railway receipts and pass as Surat and Navsari cotton at Colaba. It would be a great advantage if the bales were stamped with the name of the press at which they were pressed. I have already stated in my written evidence that both *lapas* and cotton in *docras* are

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half pressed bales are brought from districts growing inferior qualities by railway and bullock carts in order to be mixed with the superior quality of cotton of these districts. Such importation for mixing should be prohibited by legislation but an exception should be made in the case of cotton required for the local spinning and weaving mills. I do not say that the Railway Companies should be forbidden to take *Laps* or cotton for transport but that the transport of cotton for the purpose of mixing should be prohibited. It would be simpler to prevent all transport of *Laps* by railway as well as by bullock carts. *Kapas* is brought in fifty or sixty mules to Navsari from Ankleswar and adjoining districts. Transport by cart of the *Laps* outside a district should, at any rate, be prohibited.

6213. There are four sorts of weight in the tract north of the Tapti river; in one district the *bhar* is 8½ cwt; in another district it is 8½ cwt; in another, 8 cwt 1 quarter 2½ lbs. and in another, 8 cwt, 2 quarters and 8 lbs. These four weights are sometimes used in the same village and it would be much better if there was but one standard weight only. I suggest that there should be one standard *bhar* of 8½ cwt for all districts.

6214. I have stated in my written evidence that saw guns are not used in the Navsari and Surat districts. In Rajapur (East Khandesh), Messrs. Goldsmid and Company tried them but the cotton is not readily taken up by the Bombay merchants, the staple is uneven and the cotton is lumpy. The cotton tried by Messrs. Goldsmid and Company was short staple cotton of Khandesh variety.

6215. (*President*.) I do not consider the cotton forecasts accurate. In order to render them more accurate, a advisory committee should be formed consisting of Government officials and people in the trade. The ginning and pressing returns are very incomplete and are unreliable at present. I would make the submission of an accurate statement compulsory. There is so much fluctuation in cotton prices and so much speculation in cotton, that the publication of daily prices would be of no use. Government would publish prices once a day only whereas the merchant gets three or four telegrams.

6216. (*Mr. H. B. D. D.*) Formerly the length of the staple of Navsari cotton was 1½ inch but now it is about an inch. It has taken six or seven years to deteriorate to a little less than an inch.

6217. Saw guns have never been used for Navsari cotton. Navsari cotton is very soft and I think saw guns will tear the staple very badly. I would not recommend their use for Navsari cotton.

6218. (*Mr. B. C. D.*) By hybrid cotton, I mean the cotton given out by the Agricultural Farm at Surat. I think it is a hybrid. It is not a very short staple cotton, but it was not so fine as the old Navsari and Surat *deh* cotton. I think that this hybrid has deteriorated and that is being mixed with the local cotton. I can see the deterioration from the *Laps* in the form of a visible line. Even *roz* cotton is now seen here and it is deteriorating to the local cotton.

6219. As to whether cultivators would be induced to bring their cotton to a central market if one were opened, I think they would do so in time. I could only suggest the establishment of markets in the bigger places where there is a lot of cotton.

6220. Cotton has been tried by the *gird* of one village near Kun. It was very coarse and did not succeed.

Mr. M. H. KANTAVALA, M.A., Agent, Maharaja Mills Co., Ltd., Baroda.

EXAMINED AT NAVSARI, FEBRUARY 13TH, 1918

Written statement.

I.—AGRICULTURAL EXPERIENCE

(a) "*Deh*" short staple cotton.

6221. (1) Experience.—I have been in Baroda City and districts for years, and know the agricultural surroundings. I have my experience as a mill-owner has brought me in touch with many other cotton fields, particularly of Gujarat and Kathiawar.

6222. (2) Varieties.—The two varieties of *deh* short staple cotton grown round about Baroda are *roz* and *Laps*; both of them have a staple half an inch long. The former is a hard, tough and coarse fibre, the latter is softer and finer. Both of them are generally grown, just as other crops, without any special preparation.

6223. (3) Size of holdings.—The average size of holdings in Gujarat is very small, less than an acre.

6224. (4) Yields and profits.—The return to the farmers from this crop is in ordinary years ½ *bhar* per *bigha*, or say 240 lbs.; and the yield from the *Laps* is about thirty per cent, the total gross earnings per *bigha* being Rs. 60. This leaves to the cultivator a fairly good return in ordinary years, though there is not much difference in this respect between the cotton crop of short staple and cereals; but, in years of drought, cotton is a plant that holds out, and thus places the cultivator in a secure position. Sometimes the farmer grows cotton along with *tatur* or other crops in the same field to insure against the vagaries of the monsoon. One at least of the two crops survives according as the rainfall is sufficient or deficient.

6225. (5) Rotations and manures.—In some cases cotton is grown every alternate year in the same field. The manure employed is the ordinary cow-dung.

6226. (6) Conditions affecting increase in area.—The area under cultivation of this short-stapled cotton has not fluctuated much, particularly in rich soils, which can grow better crops like tobacco, oil seeds and vegetables; but recently the succession of years of deficient rainfall and higher prices of cotton have been instrumental in inducing the farmers to take to cotton, and this tendency has been reflected even in the case of the short-stapled cotton. I do not think it is possible, and advisable even, to give a further impetus to this tendency, and for two reasons: (1) already enough land is under cultivation of short-stapled cotton; perhaps the maximum is reached in Gujarat to the detriment of cereals and other crops, and (2) the rapid increase in the growth of short-stapled cotton is not desirable, because it means more and more admixture thereof with the better variety while ginning and further leads to the deterioration of the latter class of seeds.

6227. (8) Uses of seed and seed selection.—The seeds of both *roz* and *Laps* are used as fodder for cattle; a very small percentage—almost negligible—being used for oil extraction. There is no selection of seeds for growing.

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"(b) "Deshi" long-staple-cotton.

Varieties.—The long-staple cotton grown round about Baroda is called Broach, and the other which I am acquainted are the *lallo* of Ahmedabad, the "Surat" and the *wagad* of Kathiawar. I confine myself to this section to the Broach crop with which I am familiar, and refer to the other in their commercial aspect. The Broach is a cotton which is grown round about Broach, say to Ankleswar, and is only a better variety of the *kanvi*. Its staple is about three-quarters

(15) Conditions affecting increase in area.—Much of what I have said above as regards the short-staple applies to Broach. But I believe Broach is grown almost every year in the same field, and more and more land is being placed under cultivation of this variety. Not only are the existing crops grow cereals converted into cotton fields, but fresh waste land which is broken anew is requisitioned for cotton growing. Cotton grown on this fresh soil is of the finest Broach quality, and is used partly in mixture with Surat. I believe more than sufficient land is under cultivation of cotton in Gujarat. It is possible to increase the area under *deshi* long-staple cotton, by a careful and judicious selection of fields. For instance, part of the area under the cultivation of the *kanvi* crops can grow Broach, if a rich soil and are properly situated. Secondly, the soil which is newly brought under cultivation is fertile can easily grow a superior sort of cotton. Otherwise, I think, in Gujarat the right sort of is grown in the right place, regard being had to the nature of the soil, the conditions of climate, and fall, and also of labour.

(17) Prevention of mixing of different varieties.—The mixing up of the different varieties of cotton mostly takes place in the ginning factory, sometimes in the press, and only rarely in the fields. The farmer generally grows only one variety, or at least keeps the varieties apart. The admixture, and partly owing to the greed of the ginning proprietor, who cares for a higher percentage of yield of lint cotton from seed on. Some owners of factories are known to mix up seeds with this intention. Even some of the Navsari factory-owners do this. But this practice is not common. The mixing of seeds is in most cases accidental. The admixture of the two sorts of cotton while ginning is intentional, and for this the farmer is responsible. So long as there are middlemen whose business it is to buy *kapas* or seed-cotton from the cultivators, to get it ginned, and to sell this lint cotton either in *boras*, half pressed bales or full pressed bales, we can never expect the desired purity of staple. Either the consumer must buy up *kapas*, or there must be a buying agency or, better still, the farmer himself must get his *kapas* ginned. As to the difficulties and advantages of this last proposition, I shall speak later on. But I believe Government must select some and provide them to the farmers; and as far as possible all seeds must be hand-ginned: and secondly Government must have a competent and expert staff to visit the ginning factories to prevent mixing also the seeds being mixed up. Government must supervise all presses and present cotton being mixed up before pressing by interested merchants.

6231. Methods of picking.—The practice just now is to take the whole pod out, and so a lot of leaf remains in the *kapas*. Proper picking, particularly of the *rozi* and *kanvi* varieties, is essential and would ultimately benefit the farmers. Not only should the leaf be left out while picking, but immature or yellowish bolls should be kept separate.

6232. Handling of kapas.—Then the farmers should be taught to handle the *kapas* properly. At present it is thrown in the fields and a lot of foreign material gets in, particularly dust. The ginners also should keep the *kapas* and cotton in proper condition. A lot of dust get into the ginned cotton after it is ginned. Sometimes the ginning plant is imperfect and too many seeds remain inside, while sometimes the merchants are allowed to throw seeds into the ginned cotton, which prevail in Gujarat, do not induce the ginners-lessees, **6233. Necessities for improvement in ginning.**—The systems of periodic ginning and of leasing out ginning factories on short leases and to the highest bidders, which prevail in Gujarat, do not induce the ginners-lessees, and the proprietors also to keep the machinery in proper order and to replenish worn out essential parts in proper time. The ginner also has interests quite different from those of the farmer. The ginner often happens to be a merchant, and if the farmer does not sell to him, but to some other merchants in the same factory, his *kapas* is improperly ginned. The combines of the various ginning factories and Presses further leave the cultivators at the mercies of other people.

(c) Exotic cotton.

6234. General.—Very little exotic cotton is grown in Gujarat. A little Cambodia was tried in irrigated lands, but it failed, because perhaps the soil or the climate did not suit.

II.—COMMERCIAL ASPECT.

6235. (30) Local trade customs.—The present practice is that the farmers cart their *kapas* to the neighbouring ginning factory, where the proprietor or some other middleman buys up the *kapas*. The middleman is a petty merchant who generally lives on this trade. Sometimes he advances money on *kapas* standing in the fields. He often buys some *kapas*, probably mixes with it a little inferior stuff, gets the bales half pressed and sends them to Bombay, or sells them to the consumer. The bigger merchant gets the bales full pressed and sends them to the consumer. This is the local way to market the *kapas*. The only advantage is that the farmer takes no risk of the market going down; but against this is the greater disadvantage that he has to sell his produce as soon as it is ready. He cannot hold out—does not hold out at all for a possible rise in the market. Even when the prices are lowest, he sells off his *kapas*. Moreover the farmer being not the person to get the *kapas* ginned, a lot of admixture takes place, and cotton gets deteriorated every year. But this system cannot be changed. The holdings are very small, and every individual farmer cannot wait to have his *kapas*, often of the size of three or four bales, ginned, nor would the factory proprietor care to gin such small quantities separately. It would be better if some buying agencies are started by respectable merchants or Government.

6236. (31) Standardization of commercial names.—Almost all cotton grown in Gujarat, other than *lallo* which is consumed on the spot by the mills of Ahmedabad, is used to mix with Broach. The name Broach is merely a commercial name now. Both *rozi* and *kanvi* are mixed with Broach; sometimes the better sort and the better picked quality of *kanvi*, that for instance grown near Derol, is mixed up with Surat; while

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III.—STATISTICAL.

IV.—MANUFACTURE.

6238. (43) Counts spun and market for yarn or cloth. The counts spun in my mill are from 16's to 10's. Most of the yarn is used in making cloth, and that is 20's warp and 30's x ft; while the surplus yarn for sale is either 16's or 10's. The former is sold in the Bombay market, and the latter in the Madras Presidency.

6240. *Long staple versus short-staple cotton.* The present quantity of long-stapled cotton grown in India is only a small percentage of the total crop. Not only do the Lancashire mills want more and more of the stapled cotton, but the requirement of local mills in this respect are also increasing every year. It is certainly desirable to increase the area under its cultivation. But there are two considerations which must be borne in mind: the better variety of cotton requires a better soil, a better irrigation and a better knowledge of agriculture; and secondly, the yield of long-stapled cotton per acre, as I think, is smaller than that of the short-stapled, and though the market price fetched may, to a certain extent, compensate the cultivator, it is questionable whether the gross earnings per acre would be sufficient. I would rather suggest that in selected and irrigated soils new varieties of cotton may be tried, like the Punjab-American on the Tirupur Combotha.

V.—GIVEN.

6241. (46) *Attitude of buyers to improved cottons.*—Buyers of cotton are indifferent to the quality if they are not the consumers; and though they may pay a small premium for the improved variety, they do not encourage in any way the habit of growing an improved variety by paying a sufficient premium. On the other hand, this may sometimes happen to be so far that they cannot do so at their price.

6242. (49) **Effect of tenure of land.** As to land tenure, I can only suggest that if the holdings are big enough, the farmers can be their own landlords, and thus acquire an interest in the better marketing of their crops.

VI.—IRRIGATION.

6249. *General*.—There is practically no irrigation of the cotton crop in Gujarat, nor do the local varieties want any extra watering in ordinary years. In case of deficient rainfall, it would certainly be desirable to water the fields for further possible improvement, but I think the situation of Gujarat does not offer any facilities for any extent of extensive irrigation, except by means of wells. The rivers of Gujarat have little water—and that too very dependent on the rains. Wherever irrigation is possible, exotic varieties may be tried. But in the case of most foreign varieties, the farmers don't easily take to it. The reasons are: (1) The danger of failure. The Government should notify that in the event of a new variety failing, the Government would remit all the dues for the particular year. (2) The difficulty of marketing the small crop. The Government can inaugurate some agency to buy up such cottons, however it is proven, as the interested middlemen won't pay sufficient, while the farmers can't be able to take the *lapers* in small quantities to the consumers. (3) Inexperience and ignorance of farmers. This, of course, the Government Department of Agriculture can easily cope with.

Mr. H. H. Kirtland called & examined.

[illegible]

1945. A lot of them were in the ground when the first bomb was dropped in the city, and they were in the ground when the second bomb was dropped. It is alleged that it is a very small lot of them, and that they are not to be spread on the ground in the future.

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6246. I find cotton comes in damped, especially in full packed bales. Some dampness is necessary for preservation, but it improves cotton after it is made. By the use of a good preservative, the cotton gets spoiled. I have sometimes observed the staple in full packed bales which have been badly damped. We sometimes damp cotton in the mills in order to get a better result. If we got to find cotton for damped, that I do not know. The preservative is not so good as the cotton is not so good as it is. I do not know. We were in the last year, except with the help of the preservative, we could not get a good result. Some time found in the bales.

6247. I have heard of a very good preservative for cotton, but when mixed with Surati. I have never seen it. It is a very good preservative, but I do not think it could get anything better out of it than the preservative. It is a very good preservative, but I do not think it could get anything better out of it than the preservative.

6248. Pick cotton is good. It is a very good preservative, but I do not think it could get anything better out of it than the preservative. It is a very good preservative, but I do not think it could get anything better out of it than the preservative.

6249. I do not think it is a good preservative. It is a very good preservative, but I do not think it could get anything better out of it than the preservative. It is a very good preservative, but I do not think it could get anything better out of it than the preservative.

6250. The *Ray* is a very good preservative, but I do not think it could get anything better out of it than the preservative. It is a very good preservative, but I do not think it could get anything better out of it than the preservative.

6251. I do not think it is a good preservative. It is a very good preservative, but I do not think it could get anything better out of it than the preservative. It is a very good preservative, but I do not think it could get anything better out of it than the preservative.

6252. I do not think it is a good preservative. It is a very good preservative, but I do not think it could get anything better out of it than the preservative. It is a very good preservative, but I do not think it could get anything better out of it than the preservative.

6253. I do not think it is a good preservative. It is a very good preservative, but I do not think it could get anything better out of it than the preservative. It is a very good preservative, but I do not think it could get anything better out of it than the preservative.

6254. (*Parent*) The cotton bales are fairly accurate. I am not acquainted with the pressing of the cotton bales.

6255. I do not think it is a good preservative. It is a very good preservative, but I do not think it could get anything better out of it than the preservative. It is a very good preservative, but I do not think it could get anything better out of it than the preservative.

XIV.—Hyderabad.

Mr. E. F. DAVUR, Manager, Aurangabad Mills, Aurangabad (Deccan).

EXAMINED AT RAHUL, FEBRUARY 21ST, 1918.

Written statement.

II. COMMERCIAL ASPECT.

6256 (30) Local trade customs. At Aurangabad, as in all the most important cotton centres in the Nizam's Territory, a cotton market has been set up, and the *Lapas* brought in by the ryots or by tradesmen from the surrounding villages is sold by open bidding and buyers and sellers are able to take full advantage of the effects of the Bombay market. The setting up of several ginning and pressing factories has not only given a great impetus to cotton cultivation but has also enabled the cotton growers to get the best possible price for their produce owing to the competition of buyers. The *Lapas* or raw-cotton is brought to the market by two classes of sellers, (1) the cultivators themselves, or (2) petty tradesmen of all castes and creeds who go from village to village and buy the *Lapas* in small lots from cultivators to re-sell it as a business affair in the cotton market. In a few cases, you come across a moneyed villager, having influence as a money lender among the cultivators, or the ordinary village *sahukar*, acquiring the produce delivered as a forward contract for advance in the mill. But this class of sellers is not numerous in Aurangabad, and this system is not known to have any unfavourable effect on the advance of cotton cultivation. In fact, the system in vogue for marketing the cotton must be deemed to have been a satisfactory and to have increased cotton cultivation by leaps and bounds in the past ten or twelve years on this side. At the cotton market, the *Lapas* is sold to the buyers by *aratyas* on behalf of the sellers for a commission, and I have reason to believe that, on the whole, the *aratyas* work in the best interests of their clients, the more so as their number is fairly large and the competition of these *aratyas* among themselves for the commission business is always very keen. It is true that, in some instances, a seller's *aratya* is also the commission agent for a buyer from Bombay or any other place, but it does not therefore follow that in acting in the interests of the Bombay buyer he would act prejudicially to the interests of the *Lapas* seller, for, if he did so, he knows that he would be bound to lose his client and his next door rival to gain him. On the contrary, some shrewd sellers of *Lapas* prefer to

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entrust their interests to such an *amya* for reasons of their own. There is not much of *larni* or forward contract business in *lapas* on the Aurangabad side, and I am of the opinion that cultivators, large and small, in the majority of cases, exercise their own free choice as to the time when they should dispose of their *lapas*. It is a crop they can speedily harvest and quickly convert into coin if they choose, and the various cotton markets and ginning factories accessible to them in different directions from their villages leave them ample scope for marketing their produce as they think best.

6257. (31) Standardization of commercial names.—There are two principal varieties of *lapas* brought into Aurangabad, called *saloo* and *barat*. The first variety probably is the indigenous growth mostly grown in the hilly parts round Aurangabad, and the other is either pure *barat* or a mixture of *barat* and *saloo*. The *barat* cotton has been introduced from Khandesh and Berar and probably within the last thirty years. The name *barat* (*Barhat*) may have been a corruption from the Marathi *Varhad* and *Varhadi* or the modern Berar and Berari. The *barat* is the shortest staple of Aurangabad and, really speaking, *roscum* cotton. The *saloo* is somewhat better in staple and at times so good that some people have passed it off as *Parbhani* and Nander by railing it to those places as a long staple cotton. It has been noticed since the past few years that a new variety of seed has found its way into these parts and got mixed up. When ginned, the lint comes clean off it, and reveals a quite black shell and not the woolly surface characteristic of all the other seed. The lint is a soft silky one with an average length of about $\frac{3}{4}$ ths inch. Its proportion at present would appear to be about three or four per cent. Another variety observed in the Aurangabad cotton tract since about three years is a cotton that comes from some villages in the hilly country. It is an exotic seed of a long staple variety, sown in a tract covered by the villages of Babra, Nagapur and Pishor of the Kunnud Taluka. Three years ago only about five or six *gallas* or 600 or 700 seeds of *lapas* were seen in Aurangabad, while this season about 150 *gallas* (150 *masunda*) are reported to have been received. Some cultivators of that tract are reported to have introduced the seed from Khandesh. The Agricultural Department has been informed of this, and I would be glad to submit a sample, if required, for the inspection of the Indian Cotton Committee. My trials show a yield of about 36 per cent. of lint from the *lapas*. I have heard from the cultivators that this variety is grown side by side with their ordinary *lapas* and seems to grow satisfactorily. If the acreage yield can be proved to be as good as the ordinary, the Indian cultivator on the Aurangabad side ought to find this cotton a paying variety.

(2) Regarding the question of suitability of the three grades of cotton (1) *barat*, (2) mixed *barat* and (3) *saloo*, the answer is that I believe they are all suitable for the different needs of Indian mills, according as their spinning values go.

(3) I might suggest that the name *barat* may well be standardized for all short staple cottons in India, and the word *hani* for all long-staples as generic expressions, from whatever parts of the country the cotton may come. The classification of the different grades in the two species can be easily denoted by the current terms "Low," "Ordinary," "Good," "Middling," "Fair," etc., but the term "Fine" should be discarded.

III.—STATISTICAL.

6258. (33) Improvement of cotton forecast.—I believe the information as to the cotton forecast from the Nizam's Government is fairly accurate as far as circumstances go, and there are not likely to be any better media for collecting this information at the present stage of commercial progress and enlightenment in these parts than the *taluka* officials. Those engaged in the cotton trade in the Province are a class who have their own channels of information through their intercourse with villages and an intelligent interest in statistics of this nature has still to be created. There must be scope for improvement in ascertaining actual facts as to area sown and the condition of the crop from time to time, and also the greater punctuality and timeliness of the information. This is a subject which is sure to receive continued progressive attention from His Exalted Highness's enlightened Government, and I think there is no point in making suggestions which might suit the demand for them elsewhere.

6259. (34) Improvement of other statistical information.—Government would do well to publish for general information in the English language a return showing the cotton ginned and the cotton pressed in each *taluka* of the dominions and also of the cotton railed every station to various destinations in the shape of annual bulletins.

6260. (35) Publication of Liverpool and Bombay prices.—The cotton buyers at the various markets are always fully in touch with Bombay prices by post and telegraph all over the country, and this information is of importance to the sellers and buyers, as prices ruling here are affected by the rise and fall in Bombay prices. In some cases, merchants get weekly circulars from Bombay cotton agents, as Messrs. Prier de Soane & Co., or Breul & Co., which give a sort of weekly market report. If an authorized daily publication of the Bombay cotton prices at upcountry markets is made, it might have interest for those same people free of charge, as it were, but it is doubtful if the ryots and village tradesmen would profit by them. Perhaps the contrary might be the case. So far as I can judge, the time is not yet ripe for the institution of this reform. As to Liverpool prices, they would be of no use whatever.

IV.—MANUFACTURE.

(a) Ginning and pressing.

6261. (36) Type and number of gins and presses.—We have a department in our mills at Aurangabad for ginning our own *lapas* into cotton which is always used by ourselves, and is not intended for sale. We have no cotton press. We have 32 Platt's single roller double action Macarthy gins.

6262. (40) Factory labour.—The difficulty in obtaining factory labour at Aurangabad is increasing every day. Not only are we handicapped for labour employed all the year round, but also for labour employed in our ginners from November to May, and at times up to June, which is a longer period than usual with seasonal ginning factories all over the district though we work the gins and the mills during daylight hours only.

6263. (41) Condition of cotton.—Though a mill buying *lapas* for its own consumption has opportunities of selecting suitable and satisfactory stuff in the market here, on the whole it would be idle to deny that there are objectionable features about the raw cotton brought to market, viz.:—

(1) The introduction of moisture in the *lapas* said to be done by keeping it on a wet or damp place for a period before carting it.

Mr. L. P. DAVEN.

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464 (42) Effect on machinery of replacement of short staple cotton by long staple.—The same class of machinery used for long and short staples in the Aurangabad district and there does not seem to be any need of the necessity of any substantial alteration in our machines for ginning any Indian long staple cotton, as far as I am able to judge at present.

(1) Spurring or luring.

(1) The importance of the role of promoters of spinning factories.
(2) The knowledge of the state of things, arising from the difficulty of having a good and well-organized working staff of mechanics and supervisors.
(3) The need for consideration on the part of the spinning factory owner as well as the merchant that the introduction of coal or mineral oil and kerosene adds to the cost of the output. It may be remarked that in some places, merchants have been known to collusively encourage the underlings for bringing this

6266 (45) Effect on cotton market of... I am not in a position to express an opinion as to whether generally if any large proportion of the short staple cotton is permitted to make the following remarks long stapled cotton in the Nizari's Territory from all accounts is greater than the supply, and it is obviously are keen buyers, cotton cultivation is on the increase and the short staple is making inroads, and it is bound to be going against the requirement of the cotton market, if this increase of the short staple, which is found to be is not made in long staple. All over India there is an abundance of the short staple, The spread of waste preparation depreciated end mills rate, the coarser count of Indian yarns too depreciated. The spread of short staple cotton to deprecate plants in India may also in course of time throw on the market a substitute for short staple cotton in the make coarser counts from, and said the tendency to cheapen the short staple. This depreciation in the market value of coarser counts now noticeable, with the result that the finer counts prevailing in India are attaining a higher premium than used to be the case over the mill-owners are entitled to expect at the same time that the cultivation of the long staples should be more and more improved, that there should be greater uniformity of properly ripened cotton, to attain to ideal conditions. Moreover, a smaller drawback but it is not on that account fair to the mill-owner to demand from him an impossible premium on the price, considering the price paid to him for the resulting higher counts of yarn. For this reason, the agricultural expert must come in and devote his energies to place at the cultivator's disposal a long staple cotton seed and method of cultivation for it to bring him a relatively higher yield per acre.

6267. Long versus short staple cotton.—Regarding the general question of long versus short staple cotton growing in the Aurangabad district, it may be remarked that the indigenous *saloo* variety is a softer and longer one than the exotic *roschim barat*. But it is not as long in staple as the *bani* cotton now marketed in the Aurangabad district. Regarding the general question of long versus short staple cotton growing in the Aurangabad district, it may be remarked that the indigenous *saloo* variety is a softer and longer one than the exotic *roschim barat*. But it is not as long in staple as the *bani* cotton now marketed in the Aurangabad district. Regarding the general question of long versus short staple cotton growing in the Aurangabad district, it may be remarked that the indigenous *saloo* variety is a softer and longer one than the exotic *roschim barat*. But it is not as long in staple as the *bani* cotton now marketed in the Aurangabad district.

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[Continued.]

(2) Some cultivators at Nagapur and Pishor villages have introduced a real long stapled variety, which the Agricultural Department pronounces to be Cambodia. The attempt at growing it has not been methodically made. It is allowed to get mixed up with the *saloo*. It is a splendid cotton and a demand for it would be easily set up in Aurangabad. The Aurangabad Mills would be able to take it up. We have to bring Nander and Karkheli long staple from a distance and would readily take it up in their place if it could be had pure at same cost as those cottons. The cultivators say it grows as well as the *saloo*. We have, in the past, given the seed of this variety back to the cultivators. If the Agricultural Department will take up this variety and introduce more of this seed, perhaps they may find the acreage yield very encouraging. If the acreage is proved to be as good as that of the *kapas* the cultivators generally sow on this side, the success of the seed tried at Pishor would be assured, because the lint yield from this excellent long stapled variety is 36 per cent. while the lint yield of the Nander and Kerkheli *bani kapas* is about 27 per cent. only.

(3) I may state for the information of the Cotton Committee that compared to Aurangabad district, Jalna district has a more important and larger cotton trade. Jalna cotton is similar to the Aurangabad *barat* and *saloo*. But the *barat* is the principal and increasing variety at Jalna, and the market there has given an impetus to it. The region through which the metre gauge line passes in a south easterly direction from Jalna, the valley of the Godavari, produced the famous *bani* cotton of the Nizam's Territory some fifteen or twenty years ago, but now the short staple has taken a footing there also. The *barat* seed has come to stay, and the real *bani*, if found at all at places like Sailu, Perbhani, and Purna, is difficult to get, while the history of the short staple ousting the long staple is repeating itself. Perhaps the black soil of that part of the country may acclimatize the *barat* differently from elsewhere. At present, at the extreme south east of this region, places like Nander, Muddhed, Kerkheli, Umri, and Blaisa and surrounding parts are still giving to the Indian mills the much coveted long staple. But the infection of the short staple *barat* is evident and is being regretted by many people. Every effort should be made to preserve the integrity of the long staple. In the old days, the cultivation was on a limited extent, the cotton had to be handginned and transported to distant market places, and handginned seed was carefully selected, and there was no commercial enterprise to divert the minds of the cultivators to any exotic seed. But now the cultivation has been extended, it is a bigger crop to market, and the multiplication of ginning factories has created a revolution in the cultivator's idea of setting much store on the selection of seed. He takes what seed he can conveniently get from the ginning factories, whether it is the best for sowings or not, being derived it may be from a collection of good, bad and indifferent *kapas* in the factory.

(4) All these causes and effects are very difficult to control, and the havoc which the short staple plays with the long staple to the pecuniary benefit of the cultivator is a serious factor, which Government cannot overlook. I can only repeat that a variety of long staple cotton seed must be found or evolved, which can yield from the field a crop well competing in quantity with that of the short staple.

Mr. E. F. DAVUR called and examined.

6268. (President.) I am a mill manager from Aurangabad. We have a ginnery of our own attached to the mills. The best cottons in His Exalted Highness the Nizam's territory come from Nander, Karkheli and Umri. The staple of these is just under an inch, say, about $1\frac{1}{2}$ ths inch. I have been handling this cotton for fourteen years in Aurangabad. When I was an assistant at the Empress Mills at Nagpur, I used to handle this cotton. The Nander cotton is deteriorating. We find that as we go further away from the railway to the other side of the Godavari River into parts which are not in touch with the railway or with the more active spirit of the trade that we get better cotton. The hand ginned cotton that we get from out of the way places is the best. I have come across cotton in Aurangabad of which I produce a sample. It is a splendid long staple cotton. I find from experiments that I have made, though not on a very large scale, but with 100 lbs. samples, that it gives a ginning percentage of 35. This is an exceptionally good outturn. I do not know what the cotton is. Some three or four villages have taken to it but they do not grow it methodically. It is grown in some villages in the hilly tract near Aurangabad. It was thought at first that it was Cambodia but the information given to me afterwards was that it was not. The seed seems to have been brought from the Jalgaon Government farm. In my written evidence, I have drawn the attention of the Committee to the admixture which we get in our Aurangabad *kapas*. The cotton mixed with it is a black seeded cotton from which the lint comes off leaving the seed quite clean. The mixture was first noticed about five years ago. There is about four to six per cent. mixture of it in the long staple cotton. It has not the same strength as the Central Provinces *roseum*. I think the outturn of lint from that *kapas* is 31 per cent. but it never comes in separately. In Aurangabad, there are two varieties. The *barat* variety is really Berar *roseum*. I think that the name *barat* is a corruption from *Varhad*, which is the Mahratta word for Berar. About 25 years ago there was not much *barat kapas* grown in Aurangabad and other places which are contiguous to Khandesh. The seed was probably brought in from Khandesh and it has now got a footing in the low country round about Aurangabad. The indigenous cotton is grown more or less pure in the hilly tracts still. In the third year much of the *barat* nature will have gone out of that *kapas*, as owing to the soil, it gets softer.

6269. The cotton I buy for my mill is mixed. I make a selection. I take as much of the indigenous portion of it as possible for the higher counts, and the rest I set apart for the lower counts. Of course, having to do for a small mill I can manage this. We separate the *kapas* out before ginning. I do my own ginning.

6270. To expect that long staple cotton should get a premium over short staple proportionate to the difference in the counts of yarn spun is impracticable. But if the premium of finer counts over coarser ones increases, then, naturally, long staple cotton would command a better price. The tendency seems to me to be for the price of short staple cotton to be much higher in comparison, but if the public is willing to pay that price for it, how is it possible for long staple to compete with it? There is deliberate mixing of short staple cotton with long to get a better price. I do not think that you can take any practical steps to prevent that sort of thing unless you improve the buyers on the other side.

6271. The cotton of India should be known by the name of *bani* and *barat*. There must be one generic term for the long staple cotton and one for the short staple cotton. Cotton being known by place names is an absurdity. Let all long-staple cotton be called *bani*; and then have classes such as good, middling and low. For *barat* cotton there should also be good, middling and low classes. *Barat* or *roseum* grown in Khandesh is much shorter stapled than that grown in Khamgaon or Akola though it is the same variety. Even though it is a short staple cotton, if there is the classification of good or middling staple, it would be

MR. BEZONJI FARIDOONJI.

in buying as well as in selling. At present if a man has short staple cotton and mixes it with staple and then sends it off to Nander to pass it off as Nander cotton, no care is taken to examine it passes as Nander and the matter is finished. Why not have cotton examined for staple from place it comes? It must be classed as short staple if it is mixed. It must only be called long is pure but, if it is not, it only adds to the difficulties. The whole question is how to keep long and standard is not fixed, it only adds to the difficulties. Unless that is done, cotton cannot be improved. If separate so that both will remain at their proper prices relatively. If the transit of cotton from place to another by rail or cart is stopped, then there is some chance of long staple remaining long. But how is the bringing in of seed to be controlled? In His Exalted Highness' Dominions, seed is controlled by Government. Whether with such control any one will be able to buy seed, remains to be seen. Unless seed of long staple cotton that is given out yields the cultivator actively good results and with which he is satisfied, this sort of arrangement will not do at all. The up should be for the Agricultural Department to put out selected seed. I do not know where it is said that the cultivators put the *kapas* in damp places in their own houses or in a small and allow it to absorb moisture from the ground for two or three days. On the Hinganghat side, they a sort of net in which they keep the *bojas*. The net is made out of hemp and there is a good deal in it. The net is put into water before it is filled with cotton and the cotton absorbs all the moisture it. I have often had to expose *kapas* to the sun from 10 A.M. to 4 P.M. and I have noticed that there as much as six to seven per cent. difference in weight. These are tricks of the trade which it is very difficult to tackle. It all depends upon the buyer. I have to spin 20s for the market. 6273. (Mr. Hodgkinson.) I mix Aurangabad and Nander cotton, if I want to spin 20s for the market. I have to spin good 16s. or 20s. for my own weaving, I have to mix a little more Nander with Aurangabad cotton. The length of Nander staple is $\frac{3}{4}$ inch and of Aurangabad $\frac{11}{16}$ inch. I have not much experience of spinning finer counts than 22s. to 24s. I could not do 30s. with anything but Nander or Arkheli.

6274. As to picking, it would be better if cotton were picked from time to time as the bolls ripen. In our tract I believe the cotton pickers go about and pick all they can. Cotton should be picked oftener. Much unripe cotton comes in under the present system in all the pickings. We have been asked to give a return of other things but not of this. I have not got a press. We have 32 gins which are worked on the mill shaft. It would not be inconvenient if we had to submit returns. As a matter of fact, I am submitting certain returns to the Chamber of Commerce, Bombay, bi-weekly. We get printed forms for that. The Chamber of Commerce wants to know what cotton comes into the mill every fortnight. We could supply any information required.

MR. BEZONJI FARIDOONJI, Factory-owner and Cotton Merchant, Jalna.

EXAMINED AT RAICHUR, FEBRUARY 24TH, 1918.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

(a) *Deshi short staple cotton.*
(1) *Experience.*—I have belonged to His Exalted Highness the Nizam's territory and have lived at Jalna since my birth and I have been in actual touch with cotton cultivators, and myself grow cotton in the Aurangabad District and have also stayed at Parbhani and Nander Districts.

(2) *Varieties.*—Seventeen years back, there was very little or, in fact, no short staple cotton at Aurangabad and Parbhani Districts, but the convenience of the railway brought short staple seeds from Berar Districts and now there is two-thirds Berar seed cultivation which is the short staple and one-third *gaorani*. The short staple cotton is called *Berari*.

(4) *Yields and profits.*—The average yields and profits per acre generally depend on the class of soil and the financial condition of the farmer. If the field is encumbered or mortgaged to money-lenders (*sahukars*) the farmer takes no pain for its outturn, because the *sahukar* takes away all his outturn—a certain fixed rate per *palla* or at a certain price for the whole outturn. The average yield per acre varies from 75 lbs. to 25 lbs. of lint.

(5) *Rotations and manures.*—Generally farmers cultivate cotton by rotation: that is, one year they use the field for grain produce and next year for cotton. Only one or two per cent. of the fields are manured with stable manures.

(6) *Conditions affecting increase in area.*—Now-a-days, the cotton merchants as well as the mill purchasers are buying *kapas*, i.e., seed cotton, with little reference to staple, but with great care as to the outturn and colour. The price of the *kapas* is fixed with reference to the average ginning percentage; thus, *gaorani kapas* (long staple) 411 seers turns out 132 seers or one *palla* of cotton, while the *Berari* (short staple) yields 368 seers of *kapas* to 132 seers or one *palla* of cotton. So the merchants or mill buyers pay rupees or two more for the *Berari kapas*; thereby they make their cotton *bhojas padal* (average) much cheaper. So the farmer much ignores staple cotton and grows the type which gives him the highest yield and the highest outturn; without the co-operation of buying merchants and especially the mill-owner, it is impossible to check the increase of the short staple cotton. They should give strict orders to purchase only long staple standard cotton under supervision of the Agricultural Department or such other body; to be ginned in certain ginning factories under strict supervision, so that the seeds may not be damaged or crushed or adulterated, and then such seeds should be purchased by the Government Agricultural Department and distributed to the cultivators through various depôts by the *takavi* system through agricultural banks.

(8) *Uses of seed and seed selection.*—No seed selection is practised. Selection was for made by cultivators and seeds used to be put in water and the light weight seeds removed before sowing. Ten to fifteen years back, only hand-ginned cotton seeds were used for sowing purposes, but now owing to dear labour as well as the slow process of hand-ginning, the seeds from gineries are used.

strict—	(1) 32 gms and one Naamth type press (our own).
uni	(2) No pins but a cotton press (our own).
strict—	(1) 32 gms and one Naamth type press (our own).
hed	(2) 32 gms Do. do. (our own).
	(3) 32 gms Do. do. (our own).

7) Size of Lale.—The size of the lalé affects the spinning process. In the case of smooth seeds, the lalé is much fuzzy seeded variety. The size of the lalé is much fuzzy seeded variety. The size of the lalé is much fuzzy seeded variety.

[illegible]

1. (40) Factory machinery of replacement of short staple cotton gin filters according to the staple of the cotton, short or long staple, but it is only the adjustment of the gin filters according to the staple of the cotton.

V.-GENERAL-

6296 (46) Attitudes
others, Volk et Brothers and
Liverpool and have been distributed throughout the
and have come from that of the United States. The demand for
local mills and Japan for coarse materials.

Mr. BIZONJI FANDOOXI called and examined.

[illegible][illegible]

as he tried to do formerly, and the water out of the town after being mixed with cow-dung and the water out of the pond at the same time it absorbs the water out of the ground and the evidence was hand woven from Karkheh, Umri and Bani.

6300. The price of Karkhen cotton at those places above Brochenig is 7000 at present at Nander, but it Karkhen cotton is Rs. 50 above Brochenig and is not present at Nander, but cotton cannot be got even at those places. The price of 50 per bhoja but cotton is doing good work in distributing conditions as well as the soil. Umri and Bhainsi cotton is Rs. 50 above Brochenig and I quite agree with his statement. The Agricultural Department is doing good work in our fields, the climatic conditions are just as and the cotton is growing well. As Mr. Davar has just said and I quite agree with his statement, the cotton is growing well. Even if the cotton is grown in the same soil, the cotton is growing well. Even if the cotton is grown in the same soil, the cotton is growing well.

[illegible][illegible][illegible]

manure and so forth. The cultivators at Jalna, who pay their taxes by doing so. Cultivators sometimes sell some bullocks, for marriage ceremonies, for buying bullocks, for marriages have now very much improved. The cultivators

do so. Conditions have now very much

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Mr. J. D. PAPPADAKIS.

[Continued.]

6315 (8) *Uses of seed and seed selection.*—The seed is generally used as fodder locally, and what is exported from Adoni to other districts is generally utilized as fodder. Before the war, it was exported to Europe. Hand-picked seed is generally preferred in sowing by the cultivators.

6316 (9) *General economic conditions.*—As the short staple crop germinates and matures much quicker than longer plume, the cultivators prefer the former, for they get quicker and greater return than the latter.

II.—COMMERCIAL ASPECT.

6317 (30) *Local trade customs.*—The cotton is brought in the market for sale as under:—

(1) *Kapra* (cotton and seed) exported from the fields.

(2) *Ala* (hand-picked cotton) and cotton machine-ginned outside this market.

(3) *The *Lapas* seed cotton* is brought to the market for sale direct by petty dealers who buy the cultivator's *Lapas* or cotton in their villages or, in some towns, the cultivators bring their production to the *aratas* or brokers, and they sell it themselves before they get the seed. This kind of brokers advances money to the cultivator on condition that the production of those cultivators' fields will be sold under their name.

6318 (31) *Standardization of commercial names.*—The varieties of cotton are *mungara* and *gorara* (the former short, the latter long staple cotton). The commercial names of the grades are "Good Westerns."

III.—STATISTICS.

6319 (33) *Improvement of cotton forecast.*—The forecast figures at present are mostly correct so far as the area is concerned, but the forecast of outturn in quantity at time differ from the actual production.

6320 (34) *Improvement of other statistical information.*—I would point out that the fortnightly cotton price returns in their present form are very defective, the figures received from the Native States, which are at present collected by the Bombay Chamber of Commerce, being practically unreliable. I would, therefore, suggest that all these figures should be taken over by the Department of Statistics, and I would recommend, in this connection, also that a system of licensing of ginning and pressing factories should be introduced. I think that if this is done, correct figures would be easily obtained. The system of license of factories in Native States might also be introduced with good results.

(2) I would also suggest the Department of Statistics should employ a staff of travelling auditors to collect the figures from presses, mills, railways, etc. The figures thus collected would afford valuable check on the fortnightly returns. I would also point out that the cotton crop forecasts might be improved by drawing the cotton to a greater extent than is the case at present from non-official agencies such as local merchants, mills, presses, gins, etc., and too much reliance should not be placed on the official reporting agency which at present receives figures other than an agricultural reporting agency.

6321 (35) *Prevention of Liverpool and Bombay prices.*—I do not consider publication of Liverpool and Bombay prices necessary as the prices are already known through Bombay agents or up-country merchants.

IV.—MANUFACTURE.

(a) *Ginning and pressing*

6322. (36) *Type and number of gins and presses.*—The gins in our factory are double rollers, Platt Bros' make. The number of gins in our factory are 25 double, i.e., 50 rollers.

6323 (41) *Condition of cotton.*—Generally, the condition of all cotton arriving in our market is satisfactory, although in some cases adulteration, such as ground sand, clipped cotton seed and dampening etc., is resorted to.

V.—GENERAL.

6324 (46) *Attitude of buyers to improved cotton.*—The cultivators get better prices for improved and carefully kept cotton.

Mr. J. D. PAPPADAKIS called and examined.

6325 (President) In regard to the question of forecasts, I am of opinion that the area shown in them is correct but that the estimate of outturn is not as reliable as that made by my firm. I think that the Agricultural Department and the trade should form a local committee which should enquire from the local merchants what they think of the crop as they know better than anybody else. The pressing and ginning returns are incomplete even for British India. I think the submission of the returns should be made compulsory. There would not be any objection to this from our point of view. If ginning and pressing factories were licensed, the submission of statistics might be made a condition on which the license was granted.

6326 I do not think mixing can be prevented. The *Lapas* comes into the market from the ryots quite pure but the petty dealers buy different varieties and mix them up. They buy in quantity; they do not care whether it is long staple cotton or mixed, provided they can get it a rupee or two cheaper for every local unit of weight, such as the *lands* or *nag* that they buy. Their only object is to make their *Lapas* as bulky as possible. We want a better system of buying.

6327. I have been in the Berars. The market system was started when I was there. In the early days, it was very good but the committee has now fallen into the hands of interested parties and the market rules are not worked properly. If the rules were enforced by independent people, the cultivators could sell their cotton direct to the buyers and we could pay higher prices for it. In Nagpur, I have known cases in which although the ordinary rate was Rs. 42 and we offered to pay Rs. 44, we could not get the carts. The *arata* was only getting the ordinary commission of four annas from us whereas from others he was getting a commission of twelve annas so what did he care whether his constituent was getting Rs. 2 less for his production. He gave the preference to the man who gave the higher commission. The best remedy is auctions. There

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should be independent people to see that the rules are carried out and that the buyer can offer any price he likes and that the person who offers the highest price gets the cotton. Preference must not be given to a buyer who offers a lower price. If you want to protect the cultivator, you must legislate for him. There is no regular market at Adoni, not like the system in Berar. The carts simply collect by the road-side and the cultivators are trusting their *lapas* and cotton to particular brokers for sale but they never sell to us. We really had to anticipate the brokers in order to get cotton. The only way to get cotton was to post clerks on the road gates and to get the carts by giving the cultivators chits offering Rs. 4 or Rs. 5 above the rate the brokers were showing to the cultivators as being the market rates. By doing this I was getting practically the quantity required.

6328. There is no checking of weights and there is no proper supervision. There are standard weights but a lot of swindling goes on. Ninety per cent. of the cultivators are paid by the brokers for every twelve maunds (i.e., a *nag* of 312 lbs. the local unit) only ten maunds. The mischief is done by the brokers. The gin owner has nothing to do with it. He simply gets the cotton ginned. The buyers and sellers are present at the weighment but the brokers allow their buyers who most of them are their partners to take excess weight, thus reducing the price they offered for the cotton and *lapas*.

6329. (Mr. Wadia.) I was a long time in Berar. The Hingnaghat cotton used to be good staple cotton but now the staple has gone. Formerly the cultivators used to pick the best and healthiest pods from the plants, get the cotton hand-ginned and use that seed for sowing. Subsequently they found out that short staple *lapas* from other parts of the Berars was giving a better profit and so they have gone in for that. If long and short staple cotton were marketed in a pure state separately, the difference in price between them would widen. Cotton for cotton, the long staple usually brings in, at least Rs. 10 to Rs. 20 per Bombay *khandi* more than the short staple. Now the difference is greater and is Rs. 100 per *khandi*. If this big difference in price continues, I think it will be worth the cultivator's while to grow long staple cotton separately. Mixing is done to reduce the difference between the price of the short staple and the long staple. As a matter of fact, short staple cotton is mixed with the long and is passed off as long staple. I do not see how this mixing can be prevented except by legislation if that could be brought about. I am not in a fit position to say whether it is feasible or not. The gin factory owners must be prevented from grooving the rollers expressly to cut the seed for gaining in weight. I am strongly in favour of the licensing of ginneries. That would assist a great deal.

6330. I do not think that the movement of *lapas* could be prevented. Even now both in His Highness the Nizam's territory and in British territory if the villagers hear that there is four annas difference in price between one place and another, they will go to the place where the price is higher. The railways do not pass through the cotton districts. For instance, in this tract, the cultivators have to go fifty to sixty miles before they reach the railway line. The bulk of the arrivals of cotton in every market come in by cart.

6331. As a rule, the cultivators do not sow the seed which they buy from the ginning factories except from factories such as ours or Messrs. Volkart's. Most of them use hand ginned seed for sowing purposes—especially in the Western districts and even in Berar. Mixing can be stopped by the buyers making stiff allowances on mixed cotton. If the mixture in long staple is five or ten per cent. of short staple, it cannot be discovered but if it is more than ten per cent., it can be spotted in *lapas*. In the case of lint, if the short staple cotton is in lumps, it can be recognized.

6332. There are pools both in Raichur and in Adoni. Last year, the factories were charging Rs. 5 to Rs. 6, Rs. 5 for the long staple *javari* cotton and Rs. 6 for the short staple *mungari* cotton. This was for ginning a *nag* of 312 lbs. of lint. For pressing, the charge was Rs. 6 per bale of 400 lbs. This year, the charge for ginning is Rs. 12. My firm is not in the pool. We gin our own cotton. I do not think the ginning charges are unduly high as compared with other places. The charge for short staple is higher than for long staple because the gins have to be specially set for it and the gins are given less outturn per gin per hour. The ginning charges have been raised on account of the high prices of spares, etc., but in spite of that the ginning rate is about Rs. 5 per *nag* too high.

6333. There is no need to send out men from Lancashire to buy here. About sixty per cent. of the crop produced remains in India and forty per cent. of the production is exported. It depends on the demand of the buyers. Mr. Kenny said just now that it was necessary for Lancashire to send out men to buy here. Mr. Kenny is an official and not a merchant. He knows only how to assist the ryots and get the best out of their fields. If you required any quality of cotton, we could give it you in any quantity just as you wanted it. If you wanted 500 bales of *gaorani* pure, you could get it from us.

6334. (Mr. Roberts.) We had great difficulties in getting gin power; so we have got our own factories. The ginning factory owners gave so much trouble that we are compelled to have our own factories. We could never get our cotton satisfactorily ginned. The ordinary factory owner never has qualified men nor does he spend money on keeping his gins in order. They never buy materials for replacing the old parts. We found it absolutely necessary to have our own ginning factories everywhere where we have been buying cotton. Here, in Raichur, the cotton which comes in is hand-ginned and is much better than factory ginned. It contains no seed except that there may be a little adulteration to gain weight. We buy *lapas* in Raichur although we have not a factory of our own. We only buy it on a small scale and get it ginned here.

Mr. K. DORABJI, Agent, Messrs. Volkart Bros., Raichur.

EXAMINED AT RAICHUR, FEBRUARY 25TH, 1918.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

(1) "Deshi" long staple cotton.

6335. (10) Experience.—I am stationed in this part of the country since about ten years and my experience in Western cotton counts fifteen years. In the capacity as cotton selector and as buyer of cotton for my firm, I generally come in contact with cotton cultivators.

6336. (11) Varieties.—There is only one variety of cotton grown in Westerns.

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Mr. SURAJMAL DAYARAM.

Government of India Statistical Department, which might be compiling the figures obtained from the local revenue officers. There should be some improvement as the acreage figures greatly differ from the figures for the expected yield. Arrangements should be made to gather correct information by the local officers before this is submitted to the Government of India Statistical Department, and might be made public in each and every cotton district in vernacular. The local officer should not rely on the figures obtained from *patels* and *kulkarnis*, but he should at least gather information from farmers, merchants, etc.

6346. (35) Publication of Liverpool and Bombay prices.—As regards publishing Bombay and Liverpool market rates in up-country market: I do not think this advisable as it is doubtful whether it will be advantageous to the ryots, as the rates fluctuate for future and spot cotton every hour, and instead of doing good to the cultivator, he will be inclined to speculate by keeping back his goods and run into loss, being not an intelligent speculator.

IV.—MANUFACTURE.

(c) Ginning and pressing.

6347. (36) Type and number of gins and presses.—There are single as well as double roller gins in our province.

6348. (37) Size of bale.—The size of the bale is 9 c. feet.

6349. (38) Saw gins versus roller gins.—Saw gins are not used in our district. It is not suitable for our *kapas*; it will break the staple if used.

6350. (40) Factory labour.—We only sometimes experience difficulty to obtain labour at harvesting time.

6351. (41) Condition of cotton.—*Kapas* generally arrives in this place in dirty condition.

Mr. K. DORABJI called and examined.

6352. (President.) I have got fifteen years' experience of Westerns cotton. The quality of the cotton has remained fairly stationary. There is not much mixture in Westerns. I only know of one case in which 100 bales of Bersi cotton were brought in for the purpose of mixing. The cultivator hand-gins his own seed. Only one third of the crop here is ginned in the factories owing to the distance of villages from the market. There are very few ginning factories in this tract.

6353. I think the marketing arrangements are quite satisfactory. I have never heard of any cases in which false weights were used. The *aratya* gets a commission from the buyer as well as from the seller and so he gives the cultivator proper weight.

6354. (Mr. Wadia.) The marketing system is very good and there is nothing which could be done to improve it. Judging from Mr. Kenny's description, the system of marketing in *Perbhani* must be different from ours.

6355. I think that there should be a duty on short staple cotton coming into any long staple tract i.e., some form of octroi which would make it less paying to the merchant to bring in short staple cotton. It should be a fairly heavy one, at least five to ten per cent. or more. I think that the *aratyas* in this tract are very honest. They have no interest beyond their commission. I have never found *aratyas* making Rs. 20 or 30 a *khandi*. No *Bijapur* cotton comes in here.

Mr. SURAJMAL DAYARAM, Merchant, Gulbarga.

EXAMINED AT RAICHUR, FEBRUARY 25TH, 1918.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

(b) "Deshi" long staple cotton.

6356. (10) Experience.—I have been stationed in the district of Gulbarga for the last forty years and have been at Latur for the last ten years. I have been in actual touch with cotton cultivators all this time.

6357. (11) Varieties.—Only one variety of long staple cotton is cultivated in the district which I am acquainted with.

6358. Area under cotton.—About 40,000 acres are under cotton cultivation in the Gulbarga Taluk. In the Chincholi Taluk, about 20,000 acres have been set apart for the same purpose. I cannot say how things stand at Latur.

6359. (13) Yields and profits and comparative returns.—The average yield per acre is from one to one and a half *khandies*, and if proper irrigation arrangements are made, even three *khandies* may be produced. The average net profit to the cultivator is about Rs. 30 per acre.

6360. (14) Rotations and manures.—Cotton is cultivated only in the *kharif* season and very little during the *rabi*. The ordinary manure made of cowdung and other refuse is ordinarily applied.

6361. (15) Conditions affecting increase in area.—The return which the cultivator gets for cotton is much more advantageous to him than what he gets from other food crops. As no short staple or other exotic cotton is grown, I cannot draw any comparison.

(2) If any increase is made in the area, under *deshi* long-staple cotton, the following harmful conditions would set in:—Length of ginning season and climatic conditions do not, of course, stand in the way of any increase in this area. The question of irrigation does not come in our calculations, simply because cotton is produced only in the dry cultivated lands. The most important thing to be taken into consideration is, that a harmful condition would set in with food crops. At present, side by side with his cotton the cultivator also grows other food crops, which are the chief means of his subsistence. This system also helps him in this way that, if one crop fails, the other is there to save him from starvation. Besides

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MR. HANAMANTAPPAH.

[Continued.]

bales received in and exported from Bombay last year and what the stock in Bombay is at present. After obtaining this information we are in a position to guess the tendency of the market and afford facilities to the merchants. The information received serves as a guide to the merchants.

IV.—MANUFACTURE.

(a) Ginning and pressing.

6390. (36) *Type and number of gins and presses.*—I have Platt Brothers single rollers gins numbering 57 and three presses of which two are Newmyth and one Otto Gin press. They are from Liverpool and America.

6391. (37) *Size of bale.* The bales produced measure Length—4 feet 1 inch. Breadth—1 foot 5 inches. Height—1 foot 6 inches.

6392. (38) *Saw gins versus roller gins.*—Saw gins are used only for long staple hand kapas to be ginned. Our cotton being soft, only roller gins are used. If soft cotton are given to the saw gin, the staple becomes short, and the pins give very hard cuts. Saw gins are successful for Indian cotton only in such places where hard cotton is grown.

6393. (40) *Factory labour.*—If proper measures are taken to keep a sound stock of firewood, coal, gin presses, spares, etc., and to engage the labourers for the working of gins and press, no difficulties will be experienced. Any slackness in the above will, of course, tell upon the working of the factory.

6394. (41) *Condition of cotton.*—In picking through oversight, cotton is being mixed at random. Not being fully acquainted with the matter, I cannot suggest any remedy.

6395. (42) *Effect on machinery of replacement of short staple cotton by long staple.*—Girds must to be changed if short staple cotton is used in the gin factory as the seeds of the above are bigger than long staple cotton. If not changed, the cotton will be separated from the seeds but will be mixed up with the seeds.

MR. HANAMANTAPPAH called and examined.

(Translation.)

6396. *(President.)* I have a ginning and pressing factory and am also a cotton merchant. I have got two presses and a ginning factory at Yadgi and a ginning factory and a press at Raichur. I gin for myself as well as on commission. I buy kapas direct from growers and not from cultivators. The *aragals* take one per cent. commission from each sale on the value of kapas. For lint, the seller pays annas eight per nag. There is only one kind of kapas here and that is Western. There is no mixture of Berar cotton in this tract. People do not bring in fly or any dirty stuff for mixture with the cotton. Nobody asks us to adulterate cotton. If they did, we should refuse because it would give us a bad name. There are six ginning factories here and six presses. With the exception of Messrs. Volkart Bros. and the Bombay Cotton Company the other factories owners belong to the pool. Messrs. Balli Bros. do not gin or press here. The pressing charges used to be Rs. 4 to Rs. 4.8 per bale but owing to the rise in prices of hoops and gunnies, it has now been raised to Rs. 6. Re. 1 out of the pressing charges goes to the pool. Out of the ginning charges of Rs. 6, Re. 1 goes to the pool and Rs. 5 to the factory owners. We are never asked to let the rollers become *provisors* as to allow crushed seed to pass through into the lint. If this were allowed, the Bombay Cotton Trade Association would not press the cotton. In Adoni, there are two or three kinds of cotton and on the girds in the gins are changed for the different periods.

APPENDIX I.

Note by Mr. D. T. Chadwick, I.C.S., Indian Trade Commissioner, on Indian cotton.

This note is written at a distance and, therefore, under obvious disadvantages so far as opportunities for reference and verification of details are concerned, nor do I attempt to give facts regarding Madras. All those will have been deposited more accurately than I can give them.

2. The central fact in any established industry is that the manufacturer needs:—

(1) raw material for a particular purpose,

(2) the certainty that he can get supplies year by year of the same quality and character.

Variations in natural conditions from year to year militate against such absolute certainty as far as crops are concerned; but the whole scheme of allowances, arbitrations, etc., whilst providing for normal variations yet affords no real compensation to the manufacturer who finds he has received an article different from what he needed. The specialization of modern industry tends to emphasize more and more the need of the manufacturer being certain that supplies of similar and steady quality will come forward year by year in large bulk. This applies particularly to overseas markets. The statement that if the manufacturer will only pay more he will get a better or purer article does not completely meet the difficulty. It is only an odd chance that an isolated consignment of good quality can get a better price owing to the broker or merchant happening to find someone who is looking for a little of that particular grade who is short in his usual source of supply. Manufacturers will only give as a rule a higher price where they hope or expect that the same grade will come forward in larger quantities in succeeding years. Brokers in the United Kingdom say that higher prices have repeatedly been given for better qualities of Indian produce but comparatively rarely has the initial quality been maintained in subsequent years—mixing or deterioration or something has happened to the consignments. The results is that many almost distrust these new samples of better quality (I am not here alluding merely to cotton) which keep coming from India. I would almost go so far as to say that, when a manufacturer is offered a small lot of produce from a new country or a new grade of produce from an old one, his readiness to try it and pay a good price is influenced as much or more by the confidence he has of getting more like it every year than by his private opinion of the intrinsic value of that particular consignment. If an instance in cotton were needed, it is afforded by the difficulty experienced by the British Cotton Growing Association in getting Nigerian cotton at first tried and then established on the market, though for some years now arbitrations and disputes on Nigerian cotton have been very few and its quality for length of staple stands high. Experience in several lines has not convinced the market generally of India's ability to maintain quality and purity at a uniformly high level year by year although undoubtedly the reputations of some of the leading marks stand high. If a feeling of confidence in India's ability to maintain quality

INDIAN COTTON COMMITTEE :

[Continued.]

Mr. D. T. CHADWICK, I.C.S.

isted and such bodies were purely judicial official co-operation in their judgments would be in spite of this, evidence has repeatedly been brought forward—
not mixing, etc., does take place to the detriment of India's better cottons,
herefore that obviously present trade organizations are not sufficiently powerful to prevent it.
Experience of the Bombay Cotton Funds Act showed that Government inspection and grading
was either impracticable or objectionable. Is another method therefore possible whereby
Government and trade organisations can co-operate to render the penalties for real abuses
more deterrent ?

Incidentally, the maintenance of such press registers would facilitate the collection of returns from
statistical purposes which serve as a check on forecasts and also indicate how the crop is coming

Long and short staple cotton.—India has been repeatedly reproached especially from the United
n for the shortness of the staple of Indian cotton. At the same time, there is a body of opinion in
l which seemingly is increasing—that Lancashire has tended to expect too much of Indian cotton
not always used it for the purposes best suited for it. There is a fair probability that, in the future,
greater diversity in processes there will be a greater demand even in Lancashire for the short staple
There is undoubtedly a market for them in India and elsewhere. At the same time, the longest of
Indian cottons just come within the range of Lancashire's needs at present—they do very little more—
f delivered steadily pure in bulk would probably command a better scale there. But in India itself
uld seem most probable that the consumption of the longer cottons by mills in India will gradually and
bly increase. The presence then of better cottons pure in India should—if their cultivation pays the
er—increase the stability and diversity of the Indian mills. There is in fact a demand for both kinds
in both cases the trade wants the cotton in bulk and uniform—"even running" as the phrase is. One
has led to considering the practicability of

- (a) in consultation with the trade assigning certain broad areas in India to broad types,
- (b) organising the seed supply and co-operative scale on a much larger and wider scale than has hitherto
been possible in many parts of India,
- (c) increasing very greatly the staff at work in cotton areas both in regard to research and organisa-
tion of seed supply and sale,
- (d) presenting in a more accessible and easily intelligible form the methods and progress of work both
in regard to research, selection and to administrative efforts,
- (e) agreeing with the trade as to what tests should be applied to new selections, in what form and
where they should be carried out.

11. I do not believe the interests of the cultivator and the consumer are at bottom mutually
antagonistic. It may easily happen that, in a particular tract, cotton of a kind different from that formerly
cultivated may be proved to be more remunerative to the cultivator but I cannot see that it is to his
interest in the long run to deliver either product mixed ; the old maxim that the good salesman is the
man who persuades a customer to buy an article he does not want or really like is now largely discredited
in favour of the principle that the good house is the one which meets its customers' needs. But whether or
not control be exercised over the trade to check mixing—and some system of co-operative control would,
I think, be advisable if the details could be threshed out—research, selection and the organisation
of seed supply on a larger scale is needed and certainly, so far as Madras is concerned, this is not possible
without a largely increased agricultural staff.

12. What has been done is only an earnest of what can be done. This increase in staff is all the more
essential if work is to be directed, at least in certain tracts, to quality in bulk as well as to yield. Take
Madras with its great diversity of crops to all of which the Agricultural Department should attend.

- (1) There are well known kinds of cotton growing already in the Presidency which it has not been possible
yet to touch—this is an obvious and clear weakness in our work on cotton.
- (2) Even in the varieties on which work has started it has so far been mainly confined to selection of
strains with varying degrees of success. I do not believe for a moment that the last word in such selection
work has been said (nor does any one else). Work on a larger and more thorough scale still is needed in
Madras not only because probably better selections still can be found but because

- (a) general experience with all crops everywhere is that, after being grown on ordinary commercial
conditions for a term of years, deterioration frequently sets in individual strains and new pure
strains are needed.
- (b) In the urgency of attending to other crops and of getting some agricultural improvements adopted
by the farmers, I do not consider that so far it has been fully determined (in Madras at least)
what precautions are necessary to ensure that seed distributed very widely year by year is
essentially pure. As a strain becomes more widely grown, the chances of cross fertilization
are inevitably increased and at the same time the possibilities of exercising laboratory precau-
tions decreased. As things are at present, I should expect to find the longevity of our selected
strains comparatively short or a need for greater care and precautions to ensure purity arising—
this last means staff and time.
- (c) The possibilities of Mendelian work—a show class of work—on cotton have not been explored.
Mr. Parnell is fully occupied on rice, and
- (d) I do not consider that sufficient work has been done on the "welfare" conditions (if I may use
that term) of cotton and the effect of environment generally on the plant. This I venture to
expect will have as important a bearing on yield and possibly on other characteristics as has
selection or breeding. A careful reading of any of the Howards' work for instance or of Dr.
Balls' work in Egypt show how far and how vitally their researches extend beyond mere breeding
and selection. Besides we have had a small illustration in Tinnevely where one type seemed to
yield more profusely in one part of the tract and another in another part though both very
similar as regards length of staple.

12. I do not know what opinion to the Committee has been expressed in Madras and I realise much more
weight must be attached to such opinion than to any I now express, but considering the complexity of the
questions connected with rice and the need for more detailed work on cotton if quicker and fuller results are
to be obtained I consider I was wrong in the opinion I once expressed that one botanist and his staff could

APPENDIX II.]

SUMMARY OF INTERVIEWS WITH LANCASHIRE REPRESENTATIVES.

more work has been done both on the botanical side of the plant (*vide* above) and on the administrative side of seed supply and joint direct sale than has hitherto been possible.

15. All this would mean money, staff and time, the expenditure of which, considering the importance of cotton both to agricultural and industrial India, is justified. There are, however, many other crops demanding attention and if it be thought that cotton is making undue calls on general revenues, a cess of two annas per pressed bale would mean some five lakhs of rupees a year.

16. As far as Madras is concerned, licensing of ginneries is mostly needed to ensure renewal of rollers for other mechanical reasons.

17. I believe it would be a mistake to abandon crop forecasts. They are admittedly at present not satisfactory, but with increasing district staff and better press returns, improvements can, I am sure, be obtained, but the person who is responsible for the preparation should be in a position of control over some district staff. The difficulty is to get the districts to realise that these returns mean anything and the next to go: the office which compiles them to realise that their responsibility is not confined merely to compilation. I do not think this last is now the case in Madras.

APPENDIX II.

Summary of Interviews by Mr. D. T. Chadwick, I.C.S., Indian Trade Commissioner, with—

1. Mr. A. V. PATON, *Chairman of the Liverpool Cotton Association.*
2. Mr. JACKSON, *Spinner and a member both of the Empire Cotton Committee and of the Cotton Control Board.*
3. Mr. BUSH, *Liverpool Chairman of the Arbitration Committee on East Indian Cotton.*
4. Mr. GLAZEBROOK.
5. Mr. SHAND, *Liverpool broker.*
6. Mr. BLACK, *Manchester.*
7. Mr. BROWN of DENYS and BROWN, *Liverpool.*
8. Messrs. BUCHANAN and WINGNALL, *Liverpool.*
9. Mr. CONEY, *Broker and Member of the Liverpool Arbitration Committee.*
10. Mr. LEONARD, *Liverpool.*
11. Mr. A. S. PEARSE,

On behalf of the Indian Cotton Committee.

INDIAN COTTON TRADE WITH LANCASHIRE.

1. *Advantages of a wide market as against a narrow one from the spinner's point of view.*—A wide market for purchasing raw material offers so many more commercial facilities than a narrow one that, unless a manufacturer is engaged on a particular line requiring some special grade of produce, the natural tendency is for him to purchase in the widest and best organised market. Differences in price obtainable by going outside may not compensate for uncertainty of supply or greater difficulties in finance, etc. In making his contracts for selling his yarn, the spinner has to do two things as cheaply as he can :—

- (a) Ensure a supply of cotton, of the quality and kind he requires, coming in as he needs it.
- (b) Know very approximately what the raw cotton will cost him.

2. The market in American cotton is of course the best organised and, in using American cotton, the spinner as a rule adopts one of two courses (or both) to ensure the regular working of his mill.

- (a) In order to cover the forward workings of his mill and to secure uniformity of quality, a spinner may be offered and accept a large block of cotton of a guaranteed type for delivery at a fixed number of bales per week or month for many months ahead, sometimes even for a period covering the whole season. The price is arranged at an agreed number of points on futures, and the spinner can, at any time (usually as he sells his yarn), call some cotton which will cost him the future contract price plus the agreed number of points on. In buying this way, the spinner can always base his yarn price on the future quotations and keep his bought and sold balanced by calling cotton as he sells yarn.
- (b) Or he arranges to see the actual samples of the cotton before buying. Thus if he has made a contract to deliver 200,000 lbs. of yarn over a period of say five months for which he needs 500 bales of raw cotton, he can buy 500 bales of futures spread over the same period and pick up his cotton as he finds lots which suit him selling out the futures as he buys the actual and thus keeping his books balanced and seeing his cotton before buying.

These systems clearly mean that :—

- (a) The spinner does not store any more cotton than he needs.
- (b) He gets cotton as he needs it and can price his yarn contracts closely, and they could only work :
 - (a) If there were large stocks of raw cotton always at hand, i.e., in Liverpool and also plenty of buyers. Many spinners go to Lancashire and see their cotton,
 - and (b) If the cotton ran very uniformly both in nature and quality from year to year.

3. Another result of the large market and of the general uniform quality of the cotton is that it is a very readily saleable article and banks would often finance it up to 85 per cent. to 90 per cent. of its value in pre-war times. (Margins are of course wider now.) Finance was thus easy.

N.B.—During the war the proportion of business done c.i.f. from America has tended to increase.

4. *The Liverpool Market in East Indian cotton.*—It is well known that stocks of this class of cotton in Liverpool are not, as a rule large, that, on the whole, the cotton is more variable in type and quality than is American and, which is more important, it is not in the bulk of a nature generally usable in Lancashire and is, therefore, not so freely saleable in Lancashire as long as American cotton is readily available. All this means is that the market for it locally is restricted. From this several results flow.

APPENDIX II.] SUMMARY OF INTERVIEWS WITH LANCASHIRE REPRESENTATIVES.

[Continued.]

The only possible way in which to "hedge" or "cover" transactions in East Indian cotton is to deal at the same time in American. But American is not a proper cover for Indian as the prices of the two do not move in complete sympathy. Thus, when American falls, Indian also will fall but as a rule it starts to fall later and similarly when American rises it starts to rise later, as a rule, largely due to the fact that Liverpool is not the only market. The big demands for Indian cotton in Bombay and Japan affect this delay in movement of prices. Again if a man (a spinner or other) finds himself with a lump of Indian he does not like and has to sell, he may often find that he has to wait for a buyer or is squeezed in the market. Similarly if he is short and runs in quickly to buy, he may find prices up against him. In other words, the spot market in Liverpool lacks some of the steadiness of the wider American one. For the same reason, the Banks are not generally prepared to advance to an equally high limit against Indian as against American. In fact, it was put that, when an advance was asked for against Indian cotton, in fixing the limit of their advances the banks were guided more by the name and standing of the firm asking for the advance than to the security of the cotton.

All these tend to make much of the trade in Indian Cotton to be done on a c.i.f. basis—which again may do a little more trouble to the spinner than the American method because,

(a) He does not know so well when his cotton will arrive—e.g., January-February shipment may not be delivered early February or almost to April.

(b) He has to buy outright, hence and insure larger quantities of cotton than he need do if the cotton came forward month by month to meet his requirements. Further, offers of East Indian cotton begin to be made when the crop is growing for shipment as the crop comes to the ports and forward up to March-April and in some growths to June. Thus, by the end of June, spinners must have in hand (and insure) cotton sufficient to carry on till the new crop arrives in England.

(c) If when the cotton does arrive, he finds it unsuitable for his purposes—unless he has in his contract a rejection clause—he has to carry it and get rid of it as best he can—not infrequently having to wait some time and sell at a loss.

5. The points I all the above is that the spinner often finds it easier, quicker and simpler from the commercial and financial points of view to use American than to use Indian cotton. These are conveniences and affect to the price and popularity of cotton. Roughly speaking, in fact, when a kind of cotton begins to be unfavourable to the whole machinery of the market tends increasingly to drive it more and more out of favour.

6. *Other cotton exports.*—It is not suggested that the Indian is the only narrow cotton market in Liverpool. That for the Egyptian crop is also narrow and it suffers from disabilities somewhat similar to the Indian one with important differences.

(a) There is a futures market in Alex. Ind. and many cover or hedge there. No one I met recommended a futures market in Bombay.

(b) If a spinner gets a lot of Egyptian cotton unsuited to his needs, he can still sell it on the whole readily in Liverpool because it is usually suited to some one spinning a somewhat lower count of goods. Thus he does not get left with it as the holder of unsuitable Indian may.

The Egyptian and Indian markets are both narrow but the Egyptian is at the other end of the scale and is a safer and better one than the Indian one.

7. It is possible that the quantity of Indian cotton coming to Lancashire will not be sufficient in itself to provide the commercial and financial conveniences now enjoyed by American. The proper cover or hedge for Indian should be American. This means that prices of both must move in closer sympathy though the Indian or Japanese demand will always tend to cause variation. To be in this position the Indian cotton offered must be better:

(a) To run with some of the American both as regards staple and grade and strength.

(b) Move all it must be even running and *uniform* year to year. This last is *essential* as otherwise the two can never be complementary.

If these points be established so that the two run together, spinners will find it much easier to deal with Indian and the prejudices against it will get less and less.

8. *East Indian Cotton. Arbitrations, Merchants' cotton, Guarantee cotton, etc.* There are really two almost separate questions in arbitrations, viz., grade and staple and arbitrations may be on either or both. Grade is colour, appearance, freedom from dirt and leaf, etc. Generally speaking, if a particular type for mark or staple be mentioned in the contract, arbitrations may arise on any defect from the type or mark including staple. If the contract is only for, say, E. G. Es. So and so—then arbitration is normally confined to grade, i.e., condition, freedom from stained cotton, from leaf (here it may be noted that blackened leaf is a much more serious defect than brown leaf—it sticks more in the spinning), general blemish, lack of bloom, etc. Most of the selling especially by the better firms is on types which in their cases have become marks. It must be remembered that the spinner wants the cotton to use and not for resale and consequently expects to get the staple he is looking for which mostly means cotton uniform with what he has been using. Copies of the forms of contract on which cotton is sold are appended.* Among the alternative conditions is a clause which is generally referred to as "1 Mutual" Clause. By this if the consignment is slightly above standard, the seller can claim an extra price for it up to 1 but if it is more than 1 "off," the buyer has the option of total rejection. A clause such as this obviously helps to ensure quality all round in the consignment and many of the larger users of Indian cotton buy on it and prefer to buy on it. As far as I could find, many of the larger sellers also are prepared to sell on it especially where the cotton comes from trade where they have their own buying agencies and ginneries up country in India and, in other words, where the whole handling is under their own control from the start. If the cotton is rejected, it is invoiced back to the seller at the prices of the day.

Thus although many of the larger houses do deal on this "one eighth mutual" clause and it affords a guarantee for quality, shipping firms often fight shy of it until the conditions and grade of the new crop are determined. Thus, owing to the late rains in the last season, merchants dealing in Omras and Bengals ultimately refused to sell with the one eighth clause. The general effect however of such a clause is to maintain quality. Bombay would be the better place in which to enquire whether much "Home Guarantee" cotton is sold under this clause or whether shippers usually only agree to it when handling cotton which for the most part has been bought direct by their own employees up-country.

* Not printed.

and I believe the number per 1,000 in England is still lower. Now if one man in England had to keep that number of spindles running continuously he soon gets tired of handling a cotton which is frequently giving broken ends in the spinning. Also the English spinner spins stronger yarns on the whole than the Continental. A sample of the last was given - an English spinner will take good Barsi. strengthen it with the American and produce a 22's yarn, whilst the Continental spinner will probably produce a 24's yarn out of the Barsi alone. Of course, there will be no comparison in the strength of the two. "Strength" however is a

APPENDIX III.]

Mr. R. W. BROWNSON.

somewhat elusive term. As Dr. Balls points out, strength in yarn may depend not so much on the strength of single fibres but on the twist of the fibres. This too is very important for Lancashire yarns.

17. *Comments on various Indian cottons.*—There was extraordinary unanimity of opinion on several of our Indian cottons.

Lancashire likes and will take, provided she gets them pure and uniform, any amount of Cambodia and Tinnivelly American, or Tinnies, especially the selected ones, or American seeded Sind—presumably also Punjab American, but I could not ascertain for certain whether they did not confuse this with American seeded Sind.

Barsi also often has a good staple but is desperately full of leaf.

Surtee Broach—yes—but Broach generally seems to have gone all to pieces latterly—being mixed, variable and shot. They all seemed doubtful about Broach and whither it was tending.

Better Bengals and Rangoons had more than kept their place and had they thought tended to improve. Better Bengals would go more readily if staple could be improved a little and a certain harshness, which some samples, have removed.

Kumtias—"You cannot sell them" Kandeish—"Hardest of all to sell, almost impossible." Oomras—"Anything seems to come forward under this name now. There is no such thing as No. 1 Oomras." At the same time it would seem that Lancashire has recently seen very little of the best M. G. Kumtias and of the best M. G. Westerns, not being prepared to pay competitive prices with Japan and India for them. Broach "appears to have gone West altogether," and again "very badly mixed, hardest of all to sell" and again "Quotation for finest Broach is fictitious—no such thing coming forward. Staple gone dead off."

18. *Can Lancashire use more Indian cotton than she has done in the past even if our cottons are not largely improved in staple?*

I asked this question of many. These were the answers: Yes, especially of those of the Cambodia, American seed kind, Tinnies, Punjab American, if given pure and uniform year by year.

Yes, but the Lancashire spinner needs educating to them. He will take them if he gets purity and uniformity.

Yes, provided there is none of this mixing and there is certainty of type. What Lancashire needs is staple or, if there is not staple, exceedingly high grade; also there ought to be an opening for the shorter ones for hosiery yarns and for mixed cotton and wool or mixed cotton and waste goods. The manufacture of this last class of goods has been started and Indian cotton has been used. But generally the opinion of several was that Lancashire, through long distrust of Indian cotton, had not hitherto been prepared to pay the price necessary to secure the best types of Indian cotton and so did not know them fully.

19. *Commercial facilities for dealing in Indian cotton.*—The natural hedge of cover for Indian staple cotton is American and especially, if Cambodia is given pure and up to the best samples in staple that have come forward and if the other Indian staple cottons are improved a little more in staple, then American will form a natural and safe hedge or cover and many of those difficulties mentioned at the beginning of this note will disappear.

20. *Damping of cotton.*—I heard very little of this. Damping occurs in cotton from one or two tracts but, taken as a whole, Indian cotton on this score is pretty good.

21. *The present and future.*—There is little doubt that, in the present and early future, India has possibly the biggest opportunity she has had since the American war for getting her cotton better known and better established in England because:—

(1) Lancashire is very apprehensive of her supply due to the steadily increasing quantities used locally in the United States of America.

(2) Both Lancashire and the Board of Trade are very anxious to see the Empire as a whole much more self-supporting as regards cotton.

(3) Owing to these two reasons, Lancashire is more ready than before to try the possibilities of cottons she has hitherto not largely used.

(4) Many in Lancashire are realising that India has better cottons than a few years ago they were inclined to give her credit for. Messrs. Pearse, Todd and others have preached this for some time.

(5) There is also the probability that the manufacture of grades of goods which formerly were largely made on the continent may be taken up, in fact some firms have started.

A greater opportunity exists and is likely to exist than hitherto in Lancashire for Indian cottons of suitable character.

22. *The immediate present.*—Freight difficulties hamper developments from India as from elsewhere.

As is well known, the Cotton Control Board has been instituted to regulate the cotton industry during the present difficult period. Owing to the short supply of American they have decreed that mills not on Government contracts can only run fifty per cent. their spindles. Thus many spindles are idle. But any mill using only East Indian cotton can use any number of spindles. In other words East Indian cotton is free. As a matter of fact in the last five months there have only been applications from six mills for free spindles for India. The absence of these restrictions on the use of Indian cotton thus forms an opportunity for spreading its use, if, of course, it can only be shipped. Spinners and brokers urged the necessity of trying to keep shipments going but insist on using the freight only for good spinnable cotton. Much consignment cotton has since the war been shipped as spinnable which was simply unsaleable and freight had thus not been put to best use. Some urged that consignment cotton should be refused shipment in India as long as there was cotton purchased by spinners waiting freight in India.

APPENDIX III.

Note by Mr. R. W. Brownson.

East Indian cotton.

In connexion with the increased attention which is being drawn to the urgent question of the improvement of the staple of East Indian cotton, and as one who has had opportunities of observation extending over about forty five years, I venture to offer a few personal reminiscences relating to the gradual, and with few exceptions, almost universal deterioration which has marked the development of most of the leading descriptions of Surat cotton, and which commenced about the year 1875 or 1876. At that time I was in

charge of the Cotton Department in the firm of A. and A. G. Brown and Co. of which my eldest brother, who had passed a number of years in Bombay, was the head. About 1864 he engaged and sent to one of their interior ginning establishments, the Mofussil Press and Ginning Co., a gentleman who had applied to him for employment and who after a few years left and allied himself with a wealthy native. Somewhere about the year 1875 or 1876, this gentleman presented himself at our office in Liverpool and asked if we could sell for him 500 bales of "Oomrawattee" cotton of which he produced a small sample. While possessing some of the characteristics of Oomrawattee, the staple was much nearer, if not identical with Bengal, which was then of a shorter staple than we now get from Bengal. It may be noticed in passing as a curious fact, that the only growths of East Indian cotton which show an improvement and that, to my mind, a very marked one, as compared with the growth of these earlier days in the seventies, are, Bengal, Sind and Rangoon, which were then the shortest staples of the lot.

Our friend explained that while grown on Oomrawattee soil, it was grown there from Bengal seed, the ingenious native having caught on to the fact that the shorter the staple, the heavier is the outturn of lint, a fact which has become familiar to all who take the trouble to study such matters. He also explained that if we could countenance the selling of the cotton as Oomrawattee it would, at the current price of that growth, leave them a considerable profit (to my recollection somewhere about 3d. per pound) owing to the reduction of cost resulting from the output of somewhere about twenty if not thirty per cent. more lint per acre. My brother refused of course to sell the cotton as Oomrawattee, but agreed that I should offer it as "Oomrawattee description," giving it if desired the title of Bilatee. I sold the 500 bales within an hour or so at about 3d. below the current price of Oomrawattee of same grade, namely "Fully Good." I very vividly recollect my brother saying to me, when I reported the sale in a very serious tone—"That's the death knell of the Surat business." I said, "Why," when he replied "If you knew the native as I do, you would know that nothing could appeal to his inborn instincts more temptingly than the vista of prospective gain by a perfectly legal system of bastardisation such as this novel discovery opened up," and he added "You will see if I am not right that it means that Dholera will be bastardised on the same lines probably with Sind, and Broach with Dholera, etc." He was what the Americans call "dead right" and, alas, our Liverpool arbitrators, as I have contended during these last thirty odd years of experience in arbitrating for Continental Trade buyers, instead of combating the evil by making drastic allowances upon these bastard growths, have rather fostered the evil by, in my opinion, a very culpable leniency. It has often seemed to me that since many leading merchants in Bombay adopted the system of putting their marks on cotton supplied and guaranteed as to grade by native dealers, the weight of influence which ought to have condemned and discouraged the evil had unfortunately been on the other side.

I have no hesitation in asserting that with the exception of Surtee Broach and a few other specialities, the staple of all the leading qualities of Surat has deteriorated in the last thirty years to an extent that is lamentable in the extreme and which could have been avoided, had the Bombay merchants and the arbitrators who acted for them in Liverpool faced the evil boldly and, by inflicting heavy penalties, stamped it out.

It is a curious fact that apparently only in the last year or two, it appears that in America some ingenious growers have hit upon what is apparently a precisely similar method, evidenced by the arrival on our market of a certain quantity of what has been termed "half and half" cotton. This has been "salted" in with better staple, greatly doubtless to the advantage of the seller, for I am told that the shorter staple gives, just as in India, a very much heavier yield of lint at the expense of the length of staple. It is only fair however, to say that this development is doubtless primarily due to the ravages of the boll weevil, owing to the fact that while much inferior in staple, it is equally bright and matures very much more quickly, so that the danger from the weevil is much lessened.

It is gratifying however that in regard to this last development, our Liverpool Cotton Association acted promptly and it may be hoped effectively by making "half and half" cotton untenderable and, had the same course been followed in the case of Surats, the latter would probably have improved instead of deteriorating.

I venture to submit these reflections on past history in the hope that they may prove interesting in view of the effort which we hope is now going to be made to recover lost ground in India and so to improve the quality of its cotton that it may play the part it ought to do in what I think is the most vital problem for our great Lancashire Industry, namely making it independent of America for its supplies.

It has always seemed to me a mystery why India with its vast extent of fertile soil and many climatic advantages should not produce more than about 75 to 100 maunds of lint to the acre and of such inferior quality that the Lancashire spinner in times of scarcity and dear prices, paying for more cotton, is still constrained to add as he did fifty odd years ago "but not Surats."

